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VOLUNTEER CAVALRY.

THE

LESSONS OF THE DECADE

BY

A VOLUNTEER CAVALRYMAN.

NEW YORK:
PRINTED FOR THE AUTHOR.
1871.

War 953.71.

1872. June 14
Gift of
John Watts De Peyster, Lt.
of Tivoli, Duchess Co.
New York

TO
MY ESTEEMED
FRIEND AND ABLE CRITIC
BREVET MAJOR-GENERAL JOHN WATTS DE PEYSTER
THIS BOOK IS DEDICATED, IN MEMORY OF THE
MANY FRIENDLY OFFICES, PERSONAL,
MILITARY, LITERARY, AND CRITI-
CAL, RENDERED BY
HIM TO THE
AUTHOR.

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INTRODUCTION.

THE introduction for the following pages shapes itself naturally into an apology for their incompleteness. To that small but discerning part of the world to whose notice they will come a few words are due to explain this fault. Ever since the war I have cherished the idea of simplifying cavalry tactics, and of writing a book on the subject to be compressed into a single thin volume. The labor necessary to condense floating ideas into compact practicality has not been underrated by me. I have always expected to take a full year of hard work to write the book. But occupations of the varied nature which necessarily come to a poor man in our country have prevented me for many years from finding the leisure for the work, and since I have finally settled into literary labor for daily bread the leisure has been even less.

Having shown some of my materials, accumulated at spare moments, to General de Peyster, that well-known military critic was so encouraging in his praise, so urgent in his advice to complete the work at once, that I reluctantly consented to do it to oblige him. The whole of the "Lessons of the Decade" were written and in the printer's hands in three weeks from that time. They appeared in the *Army and Navy Journal*, and this small edition was printed in page form for private distribution.

If certain remarks of mine may appear unduly severe on abuses in our Army, I think that the reader will find that it is only the abuses that are so handled.

Especially is this the case in regard to the strictures on officers. No man can honor the influence of good officers more than I. No one can feel so acutely the faults of bad officers as the man who has been compelled to see gallant deeds rendered useless by the inefficiency of commanders. It is not against the efficient West Point officers that my strictures are directed, but against those vain, conceited boys who imagine that a West Point education makes them generals, of necessity.

The second part of this treatise was judged by the editors too technical for publication in the *Army and Navy Journal*; only a few extracts therefrom were therefore printed, which will be found in the following pages. If the demand shall authorize a new edition, I hope to be able to find time to revise and complete the whole work.

FREDERICK WHITTAKER,
Second Lieut. and Brevet Capt. Sixth N. Y. Vol. Cav.

NEW YORK, October 7, 1871.

VOLUNTEER CAVALRY.

THE LESSONS OF THE DECADE.

BY A VOLUNTEER CAVALRYMAN.

THE SABRE.

WE may say without boasting that at the close of the great civil war in America the armament and training of our volunteer cavalry on both sides were more practical and efficient than those of any regular cavalry in Europe. If in drill and personal appearance many a crack regiment of the latter could surpass them, in a week's real hard campaigning over any country at haphazard, one of our regiments could have marched all around their opponents, decimating them without loss to themselves. Under the system of *raids* our cavalry, with a battery of flying artillery to each brigade, put the whole country in terror for a distance that would require a whole army to influence in Europe. Infantry and artillery of equal force we despised. The mobile and elastic dismounted skirmish line with artillery supports was far superior in destructiveness to the infantry line of battle, on account of its rapidity and dash.

This is the bright side of the picture. I expose the dark with the greater readiness now because the fault is easily remedied in the future, and if so done, our cavalry would then be the best in the world.

The fault is this:

Had one of our cavalry regiments been put into a

level plain with no arms but sabres, opposed to a like force of European heavy cavalry, especially cuirassiers, they would in all probability have been routed. With lancers opposed to them in the same manner their defeat would have also been nearly certain. *Deprived of fire-arms*, our cavalry would have been overthrown.

The fact is an unpalatable one to an American cavalry officer, and many will utterly deny it from *esprit de corps* and national vanity. But a fact it is, and both the reason and the remedy are simple.

The reason was that our men had little or no confidence with the sabre. The reason of that again was that they were never taught to use it properly. The ultimate reason of all—our system of sabre exercise, as laid down in the tactics, is radically bad, and our men never fenced together.

The remedy is as simple as the reason. Introduce a good system and make your men fence constantly. Then American cavalry will be second to none other, heavy or light.

During the war many officers contracted a positive prejudice against the use of the sabre, and in some regiments, mostly Confederate, it was entirely laid aside, all charging being done with the pistol. But, so far as the author's observation goes, he never remembers an instance in which a sabre charge, resolutely pushed, failed to *drive the pistols*. But the individual fancy of a colonel generally regulated the matter for his regiment. If he were an enthusiastic swordsman he always managed to infuse the same spirit into his men, and such regiments depended on their sabres with just confidence. But very few colonels on either side were swordsmen. The sabre is a weapon that requires constant practice to keep one's hand in, and our cavalry officers, as a class, are entirely deficient in that practice. Hence the contempt for the sabre inculcated by a class of men who simply could not handle it.

Many officers now advocate the pistol for a charging

weapon in preference to the sabre. They insist that a pistol shot kills, when a sabre cut only wounds. We have heard officers openly avow the sabre to be *useless*. In one regiment it was publicly boasted, in the writer's hearing, that they never yet had drawn a sabre in a charge, and never would charge with anything but pistols. The slight effect of sabre cuts is noticed by cavalry officers on both sides. Several who have written their own adventures have mentioned it in their books, and have been quoted in their turn by the cavalry compilers.

But in all the instances during the war, in which the sabre proved ineffective, it may safely be asserted that it was owing to two things—want of fencing practice and blunt sabres.

The latter cause, as much as the former, conduced to this want of confidence in the sabre. The men shrunk from using a weapon with which they never had encountered a foe, and they knew also that the said weapons would not cut.

It is a strange fact, that after all that has been said and written about sharp sabres, by every one who has written on the subject of cavalry they still remain, in every service known, as blunt as ever.

Nolan constantly insists that "a sharp sabre will cut in any one's hand." De Brack remarks: "*Surtout conservez le fil de votre sabre, comme celui de votre rasoir.*"

Red tape at the head of affairs remains stolidly impenetrable. Sabres are issued blunt enough to ride on to San Francisco. The steel is hard. Grindstones are not to be found. The soldiers lose confidence in the weapon, and prefer the revolver.

Now if the War Department would simply require in all future contracts for sabres that they should be delivered, each sharp enough to cut a sheet of paper, by striking the paper on the sword lightly, the American cavalry of the future would be revolutionized.

If whetstones were furnished the men, or what are

called scythe-rifles, a sabre issued sharp would be kept sharp. But as it is, the men cannot get them sharp. The writer has stood at a grindstone turned by steam, and tried to grind an Ames sabre for over an hour. He can testify that it is hard, the hardest kind of work. But if ground while in soft temper, at the factory, the hardening temper subsequently received would leave them sharp still, and easily kept so.

And there is no fear but that the men, with very little looking after, would keep them so. Soldiers are fond and proud of good weapons, and take good care of them. All men are apt to be vain of bodily strength and skill. It gives a man a braver feeling to cut down an adversary than to shoot him, and by just so much as he trusts to his sword, his *morale* will be raised.

That the sword may be made a murderous weapon when sharp we have no need to quote Nolan.

A more recent book, unconnected with military science, and therefore unwarped by prejudice, gives testimony on this point, convincing to any one.

Sir Samuel Baker, the bold traveller, who discovered the ultimate source of the mysterious Nile, so long sought in vain, has published a book of his adventures on the Blue Nile and its tributaries of Abyssinia, in which he gives a full account of the Hamran Arabs of that region, who hunt all kinds of game, from the elephant to the wild boar or antelope, with no other weapon but the simple sabre.

Three or four of them combined are sufficient to kill the most vicious male elephant, if they catch him in the open. They hesitate not to attack the lion in the same way, and with equal success, if he too is caught *in the open*.

Their swords are Solingen blades, made in Germany, and quite common in the United States as officers' swords. It costs a poor Hamran half a life's labor to buy a new one, and they are handed down from father to son as heirlooms. It is their fancy to have them straight and

cross-hilted, unlike the equally keen Damascus scimitar.

But the remarkable fact about these swords is their wonderful cutting power. This cutting power arises simply from their being kept sharp as razors literally.

Sir Samuel Baker says that the Arab's first care after a march is to draw his sword and strap it to and fro on his leathern shield. He never rests satisfied till with it he can shave some hair off his bare arm. This shows to what keenness of edge our own weapons might be brought. No mysterious Damascus blades, but the familiar Solingen sabre, which is advertised daily in every military gazette; and we have no doubt that the Ames blades, from Chicopee, Mass., could be brought to an equally fine edge with care.

Now for the performances of these weapons:

On one occasion a wild boar at bay created much trouble for Baker's party. He charged a German servant, who awaited his attack, and got knocked over by the animal, and put in imminent danger of his life. At this juncture, "Abou Do leaned over from his horse and let his sword drop over the hog's back, nearly dividing the animal in half."

On another occasion, chasing a rhinoceros, it gets into the bushes after a hard race, but, just as it has almost gained the cover, "Taher Shereef sprang almost out of the saddle, and made a blow. A gash nearly two feet in length appeared in the rhinoceros's quarter," etc.

We quote from memory; but the verbiage is the only inaccuracy.

The *facts* are as stated.

Taher Shereef, with a single blow, cut deep enough into the colossal leg of an old elephant to divide the tough back sinew and hamstring the animal, who bled to death in ten minutes, the artery being divided; and, in the Arab fights, men are quite frequently cut in two at the waist, Baker informs us.

If our men had weapons like that, which they might

have without expense, almost, we should have no more of "useless sabres." A sabre should be kept as sharp as a razor. No half-way ought to be allowed. It can be done, and it ought to be enforced. Fancy our men armed with razors three feet long. What ghastly wounds they could inflict on an enemy, the very first fight, when every accidental slash would open a gash a foot long; and how shy any enemy would fight of such men, if in other respects well armed and horsed.

In the cavalry of the future, these "three-foot razors," if ever a man is found to introduce them, will be the greatest innovation of modern warfare since gunpowder.

But the greatest cause of the superiority of the sabre will be in its moral effect.

Morale becomes more and more every day the secret of modern warfare. Every new weapon which is invented if good for anything is immensely exaggerated in its moral effect. The needle-gun has frightened ten men off the field for every one it has killed, because it was reported to be far better than it was. Its effects at close quarters and in the open field were awful. At long ranges and in wood skirmishing the muzzle-loader could have held its own besides shooting stronger. But the moral effect of the needle-gun scared away the Austrian jagers. Get a man well scared and give him a thirty-shot repeating rifle and a dozen revolvers, and he'll run like a hare from old Brown Bess in the hands of his *moral* superior.

A good sound thrashing, whatever the weapons used, leaves a great respect for them in the mind of the thrashed party. I have heard men armed with breech-loaders talk longingly of the advantages of the muzzle-loading long Enfield rifle, because that rifle had been the instrument of their thrashing the day before.

Now the moral effect of a charge is tremendous. The fierce charging yell, rising and swelling higher and higher till it overtops the sound of musketry, frightens

more men than the bullets. Very, very few troops will stand up against a charge unsupported by works; we might say none. One side or the other is sure to give way, not from the force of weapons, but simply because they're afraid. And anything which encourages men to charge home doubles their *morale*, and *morale* is everything.

It was *morale*, which, after the first victory at Woerth, gained by overwhelming numbers, (about four to one on the field) made the subsequent Prussian successes so much easier to gain over the French in 1870. In that battle the celebrated Zouaves were forced into a complete rout, for the first time in their history. That corps had, up to that day, been considered the most desperate fighters in all Europe, and practically invincible. They really were so, in any ordinary circumstances. Their *morale* made them twice as formidable as they really were. But, under the shock of numbers absolutely impossible for human beings to stand up against, they were routed at last. The spell was broken, and with it the heart of the Zouave. His *morale* was shaken to dissolution, and with it sunk the *morale* of the whole French army. The men who could conquer their unparalleled Zouaves must be devils incarnate. So the French troops became easier to defeat every day, as bad generalship completed the wreck of their *morale*.

And as theirs fell, so rose their adversaries. This is always the case. A scared enemy, after the loss of one battle, is half beaten before he enters the next; and the attacking party, in nine battles out of ten, is the victor.

So with our cavalry of the future. Give them a weapon which they know to be irresistible at close quarters, and they will be only too anxious to charge. A charging regiment, with "three-foot razors," will not lose half as many men as its opponent the "pistol chargers." Half the pistol shots are thrown away, fired from a galloping horse at a galloping horseman who passes like a flash. Mixed up in a melée the pistol chargers will soon learn

to give a wide berth to the "razor bearers;" and to do so they must run. Now a runner soon gets demoralized.

It may be said—I have heard it triumphantly instanced by an officer on the "pistol side," that the revolver men may run away before the others, and then turn on them with their pistols as soon as the swordsmen halt to rally to the recall. Instances of the sort had occurred in that officer's knowledge, which had given him that opinion. He had seen a regiment so served. But the sabre charge was not pushed in real earnest, and the men had no confidence in their weapons. Had each man carried a sword, with which he knew he could cut his enemy in half at the waist with a good backhander, the revolver-armed enemy would not have escaped, so "gayly laughing," as the narrator said. The moral effect of those three-foot razors" would have kept them at very long shots, and a cavalry charge become a thing far more dreaded than it is now.

We have entered into this question fully, as its importance demands, without boring the reader with a long list of instances. It is a subject on which we contend that grave misapprehension exists. We have good sabres, excellent steel. The mere enforcement of what every cavalry officer must admit to be a good rule would at once work a revolution in the cavalry of the future, doubling its *morale*.

THE REVOLVER.

Without any doubt the introduction of the revolver into cavalry service has doubled the destructive power of the latter; and of all revolvers introduced the old "Colt's" is by far the best. It shoots straight. No other revolver that I am acquainted with is sighted with the precision of Colt's. Many others shoot as strong, some stronger. Many are loaded with much more facility and more easily cleaned. But the fact remains that, for active service, Colt's revolver will be adjudged the best

pistol extant by any and every officer or man who has had had to stake his life on his weapons. The reason is this: Screw a Colt's revolver into a vice, with the two sights in line with an object, and when you pull the trigger the ball will go exactly where it is aimed. All six bullets can be put into the same hole. With no revolver that we have ever seen, other than Colt's, can this be done. Smith & Wesson's, Dean & Adams's, etc., all are nice-looking revolvers, easy to clean, easy to load, shooting strong—in all respects but one better than Colt's. But the one excellence of delicate and correct sighting has overbalanced all these other claims and renders Colt's *primus inter pares*.

It is a strange thing that gunsmiths and inventors appear to entirely overlook this fact of precision. Revolvers and pistols are advertised daily, whose simplicity, ease of loading, and penetration are duly vaunted to the public. Civilians buy them and keep them for possible burglars. It's all they're good for. Their sighting is simply *nil*.

What good is a strong-shooting, quick-loading pistol to a man if he does not know where his bullet will fetch up when he points it at a mark? The inexorable logic of experience teaches soldiers, sailors, hunters, and desperadoes, North and South, that they can rely on a Colt's pistol when a Smith & Wesson's, etc., will "shoot all over."

You must keep cool in loading a Colt's revolver. The weapon is a valuable one and requires as much care as a watch. Neglected, it becomes as useless as a blunt sabre, refuses to revolve, misses fire, and misbehaves itself generally. Arm a lot of greenhorns with it, and they will render it useless in six weeks. Give it to men who know its value and they will do wonders with it.

In the hands of the Southern cavalry the revolver became their pet and pride. The terrible use to which it was put in broken ground, at close quarters, by Mosby's troopers doubled its real efficiency by its moral strength.

Our future cavalry will do well to accept the lesson taught by this fact.

The true use of the revolver lies in irregular warfare. where single combats and sudden encounters of small parties take place, on horseback, in narrow lanes, among woods and fences, where the sabre cannot be used. In such places, and wherever regular order is broken up, the revolver is invaluable. In pursuits, patrols, and surprises it is superior to the sabre. In line charges in the field the latter is always conqueror if it is sharp.

The use of the revolver should be as carefully taught as that of the sabre. Ammunition, to practice with, is not thrown away here. The weapon should be inspected every day by company officers, as none gets out of order so soon if neglected.

But one thing should be impressed upon every man—never to try long shots when on horseback. This is the way ammunition is wasted. Target shooting may be made very instructive and useful, as men soon grow proud of proficiency in pistol shooting and improve from emulation.

For loading Colt's revolvers a powder-flask and bullets are much better than compressed cartridges. The latter have hardly any strength. I have seen pistols burst in firing a second shot from their use. The first bullet stuck in the barrel midway, the powder not being strong enough to expel it fully. The second burst the pistol.

Copper cartridges, with fulminating powder inserted, are better than either. The Remington pistol uses these; but I have not seen any of Colt's pattern arranged for the same purpose. If they ever are, the pistol will be nearly perfect, as copper cartridges are waterproof, and stronger shooting than loose powder.*

The revolver on the right hip should have a cord fastened to it a yard long. The men should be practised

* The latest patterns of Remington revolvers are well-sighted, and shoot well; as, using copper cartridges, they are preferable even to Colt's.

in firing at a target when passing at speed, and then dropping the pistol on the opposite side, to use the cord while they handle the sabre.

Thus employed at the very instant before closing, the pistol is a terrible adjunct of the sabre. In the second part of this book the necessary drill will be given to practise this charge, the sabre in the left hand, or held between the teeth.

But in this matter the men must be taught never to fire before the word. The moral effect of a reserved volley is tremendous. Irregular file firing during an advance is both useless and demoralizing. Patience under fire makes veterans so formidable. Their reserved volley sweeps everything before it. Thirty or forty feet from the enemy's line is the time to fire, all together and aiming low. Then the reserve of cold steel will come with double the efficacy, real and moral, and no cavalry, be they heavy or light, cuirassiers or lancers, that does not follow the same system, can stand against your own line.

CARBINES.

With regard to the best weapon for dismounted men it is hard to decide. I have seen several different carbines, all good in their way. The Spencer carbine was latterly in very general use, superseding Sharp's. There was but little to choose between them. I have fired as many rounds in the course of twenty minutes out of Sharp's as out of Spencer's. The latter fires seven rounds pretty rapidly, but it takes some time to reload. The Henry rifle, or sixteen-shooter, is a magnificent weapon, quickly loaded, and firing as quick as a Colt's revolver. It is also very accurate. Colt's rifle, although very expensive, is, I am inclined to think, as good or better than any, in the hands of men who are cool and know how to use it. The six shots are fired more rapidly and far more accurately than by any other piece extant, but the loading must be done without flurrying. It is a poor weapon to give to green troops on this account.

A simple breech-loader that requires no capping, is probably the best weapon for volunteer cavalry troops. We have seen one called Howard's rifle, or the "thunderbolt," that excels in simplicity and lightness any carbine hitherto used in war. The cavalry carbine of this pattern weighs only six pounds, and loads and primes with only three motions; the two ordinary lever motions of Sharp's and Spencer's, and dropping in the cartridge. It cocks itself in loading, and has no external hammer to catch in dresses and let off the piece.

But, the weapon being selected, the men to use it are the real point of importance. The whole difference in action between green troops and veterans lies only in coolness, not courage. The difference in campaigning lies in the art of making yourself comfortable under any and all circumstances; rain or shine, winter or summer. We shallhave more to say upon this in its proper place.

DISMOUNTED FIGHTING.

European cavalry officers and the world at large have no conception of the extent to which dismounted fighting was used in the American civil war and the perfection attained in it by our men after very little practice. The instructions therefor are to be found in our cavalry tactics of 1840, which are based mainly on the old French tactics. It will thus be seen that the idea is an old one. But the extent to which it was carried was purely an American innovation. Our country being much covered with woods, mounted fighting is often impracticable. But to men accustomed to fighting on foot no country is difficult. The rapidity exhibited in going into action by dismounted cavalry is marvellous, and the simplipity and adaptability of the system admirable.

In two minutes from the word, "prepare to fight on foot," a line of three-fourths of the men is formed, who go to the front at a run; while the column of horses led by the "number four" out of each set is moved off to the rear, out of danger of stray bullets.

The dash and impetuosity of a dismounted skirmish line is far beyond that of an infantry force of equal numbers. The men come into action perfectly fresh. It is a positive relief to get out of the saddle after a long day's riding. All of the fighting is done at a quick run. You could not get an infantry line to move so fast. They know well that if they tire themselves out running they will pay for it on the march. But the cavalryman is not fatigued. He has, no knapsack to weigh him down. His sabre was left on his saddle. He fights altogether on a skirmish line and can do much damage without suffering proportionately. The destructive strength of that thin, elastic line of skirmishers is amazing. A small force can hold a very large area. A large force is practically impossible to turn. Ten thousand cavalry, such as the cavalry corps of the Army of the Potomac once possessed, would form a line of battle from three to five miles long. Thin as was the line, woe betide the enemy that massed heavy forces to pierce it! The experiment was tried on both sides, and always to be repented of. The skirmish line would give back in one place only to advance in another. The enemy, overwhelmed by a cross-fire from a semicircle of invisible foes, finally fell back in every instance with heavy loss. The only way to drive a skirmish line is to flank it and threaten the led horses; and to do that requires superior force and a very wide-awake leader. And when, after fighting for two or three hours and driving the enemy at a quick run, till the men are fagged out and a success gained, the open ground appears beyond the woods in which the action has been fought. The enemy have retired and it becomes necessary to pursue. In such a case the infantry is powerless to press the enemy sufficiently; but just in the nick of time up come the horses in columns of fours by the roads. The skirmish line is called in and mounted. The men, tired with running, can still ride as rapidly as ever. The horses have been resting and are able to press on. So that we combine the advantages of both infantry and cavalry.

In covering a retreat dismounted cavalry are equally servicable. Men who know that their retreat is quite secure at a minute's notice will defend a position far more stubbornly than in any other case. Occupying the edge of a wood, the line of a fence, any obstacle which affords a shelter, our skirmishers will hold on to the last minute, firing on the advancing enemy till they know that every gun and wagon is out of danger, and then suddenly breaking, silently and swiftly run to their horses, away over the open ground till another defensive position is reached, when the same game is repeated.

In such cases, to cover their retreat, a mounted line of skirmishers is always stationed behind, whose imposing attitude awes the enemy for a brief space, long enough for the footmen to get away in safety, when the recall brings in the horsemen.

I have seen this mode of fighting so often in both aspects that it has grown to be an old story. Its efficacy is great, and it is adaptable to any ground generally deemed "impracticable for cavalry." We knew no such ground in the U. S. Volunteer Cavalry.

Open fields were fought on mounted. Our line of battle in corps front was always formed in the one way. Each brigade detached one of its regiments to cover its whole front, often half a mile long, with a chain of skirmishers. Two more regiments followed behind each wing, at about two hundred yards apart, in line, with sabres drawn. The rest of the brigade formed a third line in column of fours.

There was plenty of room to manœuvre our guns, which took advantage of every hill to fire a few rounds. Advancing or retreating, this order was alike pliable and useful. It covered an immense front, and its supports were easily shifted. The brigades averaged four regiments, some five. On open ground, such as in central Virginia, around Brandy Station, the mounted fighting was of the most inspiriting, romantic, and thoroughly

delightful kind, as also in the open fields of the lower valley of the Shenandoah. These were the only places where sabre charges were possible, and several times we shared in their wild intoxication. Glorious days were those, and green to the memory of those who shared in them, in the fall of 1863 in that delightful climate.

Whenever woods intervened the mounted skirmish line was dismounted, each squadron officer attending to his own squadron, and the woods cleared on foot. When the ground opened again four legs superseded two.

SAVING AMMUNITION.

But there was one lesson which might have been learned in the war, which yet was not. Neither side seemed to give it a thought; and it was reserved for the, sober, philosophic German to teach it to us in 1870. This lesson, the most valuable of all, is how to save your ammunition.

General von Moltke, to whose genius the brilliant results of the campaigns of Sadowa and Sedan are owing, is the first man in high place who has had the wisdom to profit by experience in this matter,

The saving of ammunition, if ever fully carried out in modern warfare, will be found to be the greatest revolution since Leopold of Dessau introduced the iron ramrod.

The fault of wasting it is the crying sin of modern armies. It is the commonest thing in the world to see officers on the line of baltle encouraging their men to waste ammunition. "Fire away, boys!" "Give 'em hell!" "That's it!" "Give it to 'em!" is the shout of almost every excited man on the skirmish line; and the officers, having no rifles, do nothing but yell to the men to fire faster.

What is the consequence? Ninety-nine bullets out of a hundred fired in action are fired at random. A dismounted man goes on the line with twenty rounds in his box, and perhaps forty or sixty more crammed in his

pockets. The line fights for an hour and a half; and at the end of that time the cry arises, "Fall back!" "We're out of ammunition!"

West Pointers, men who have never been in the ranks, may scout the idea I am about to advance; but I am convinced that, in nine cases out of ten, an officer of dismounted cavalry fighting on foot would do well to borrow a carbine and sling from one of the horseholders, instead of taking a sabre with him. In every dismounted skirmish line I have seen the less company officers interfered with it the better it got on. The best officers on a skirmish line I remember always borrowed a carbine to use; and the men *followed* them. Sword-armed officers are too apt to get behind the line, and shout to men to "*go* on," instead of being well up with them. An officer taking a carbine, and carrying only a few rounds of ammunition, will better realize the necessity of saving it.

If a prize were offered to the man who should maintain his post on the skirmish line, and bring out by the end of the campaign the largest average number of cartridges in each battle, I am fully convinced that the regiment adopting such a system would kill more enemies and be twice as much dreaded as under the random system.

But, as in the case of sharp sabres, before mentioned, although everybody admits the truth, practically it is set at naught. It is well enough to deplore the waste, but no one seems to try to remedy it, or at least no one did till Von Moltke. What *he* has done by his reform the world knows.

If every general officer in our service would enjoin upon his brigadiers to enforce the saving of ammunition upon their different regiments, the gain in efficiency would be enormous. The moral effect of an army which reserves its fire till sure of its aim is something wonderful, whether in attack or defence; and the corresponding weakness of an enemy which begins to fire at long ranges is equally marked.

If regiments drawing the smallest quantity of ammunition, and still holding their position, were praised in general orders, the emulation would be, we are convinced, productive of unmixed good. Forty rounds of ammunition ought to be enough for any cavalry skirmisher, if he fights from daylight till dark; and a regiment announcing itself "out of ammunition" in the thick of a fight ought to be severely censured in brigade, division, and corps orders, even while ammunition was supplied.

I write from practical experience. I lay on the skirmish line at Cold Harbor in June, 1864, when infantry and cavalry attacked us for several hours. I knew well that, during all that time, I could not get rid of more than twenty shots, aimed at anything certain. Bullets were flying about, but they were fired at random. A knot of cool hands lay on the ground near me, each by his little pile of rails; and a shot about once in a minute, with a long steady aim at the puffs of the enemy's smoke, was all we could manage conscientiously. At the same time a terrible firing was going on at our right, as if a corps of infantry were engaged; and then, the first thing we knew, men were falling back there "out of ammunition."

Again and again, have I seen the same thing—men reserving their fire, coming to the rescue of the squanderers, to be reproached by those squanderers for having "done nothing, while we were fighting superior numbers." A beaten man always has an excuse.

But these "out-of-ammunition" fellows have often got better men into grave peril, by falling back, and thus leaving a gap for the enemy to occupy. I have seen the whole of a brigade forced into a retreat, and the loss of many prisoners, from the failure of a single regiment in this manner. It was at Trevillyan Station, near Gordonsville, Virginia, we fighting on foot, and before we were aware of it, a force of the enemy was in our rear, and firing into the led horses. Only the ap-

proach of darkness saved many of us, myself in the number, from capture, and I lost my horse and had to foot it until I captured another.

ORGANIZATION.

We have taken our lesson from the late war as to the arms of the cavalry of the future. Let us take also our profit from it in regard to organization.

In the United States any war that comes upon us, if of any magnitude, is sure to find us unprepared. It is the nature of our people that it should be so. They are impatient of all standing armies beyond a police force for the Indians. Our cavalry of the future will have to be hastily raised and put in service like our cavalry of the past, without many weeks for drill. Let us, in that possible future, follow the example of the South in the war, and organize our cavalry from men owning their own horses, whether in town or country.

The advantages of this system were remarkably illustrated during the War of the Rebellion. At its inception the Southern cavalry were far superior to that of the North. Born in a country where roads were bad, and wheeled vehicles, except heavy wagons and old lumbering stage-coaches, almost unknown, the Southerners as a rule made all their excursions for business or pleasure on horseback. As a consequence the poor riders were the exception, good riders the rule, among high and low.

In the North the rule was reversed. Buggies were and are the rule, riders the exception. Thus it will be seen that a nation of good riders started with a great advantage over those who, as a nation, considered the horse as a driving machine, to be hauled at with both hands.

The consequence was as might be expected. In the first year of the war the Southern cavalry displayed a marked superiority. On horseback they felt at home, while the green levies from the North were in a strange and uncomfortable position.

The Northern cavalry were well armed at that period, as far as revolvers went; the Southerners, many of them, carried only double-barrelled fowling pieces with buck-shot.

And yet that first year was fruitful of instances where whole squadrons of the Northern cavalry were taken prisoners. The second year of the war passed away, with the Northern cavalry still in the slough of despond, but slowly improving. In the third year they suddenly came out and beat their old masters. The Southerners had taught them how to fight on horses, and they had learned to ride in the best of all schools, the rough and ready school of active service.

In the last two years of the war the superiority of the Northern horse over that of the Confederates became almost as marked as that of the Confederates had been in the beginning. It is true that no batches of prisoners were taken without resistance, but that was because we had old soldiers to deal with, not green recruits. But in the years 1863 and 1864 the Confederate cavalry slowly waned as ours rose in lustre. Morgan was taken; so was Gilmore. Stewart was killed, the flower of Southern chivalry. To the old Southern cavalry leaders none were found to succeed worthy to emulate their deeds. Even Moseby's ubiquitous band became less and less formidable daily. Our cavalry saw the day when it was able to outmarch and outfight that terrible horse, before whose far-reaching raids the whole Army had once trembled.

One cause of this change was the falling off of horses in the South, by which their cavalry became weaker in numbers. But, more than the weakness in numbers, it compelled the Southern cavalry leaders to be cautious and husband horses that could not be replaced. A cautious cavalry soon becomes over-cautious, timid for the safety of its horses; and timidity of action is the bane of success.

But all the good in the United States cavalry at the close of the war was originally owing to the teaching of

their adversaries. Men inspired by sectional vanity and *esprit de corps*, may feel disposed to deny this. The impartial observer of future times will confess it, and also admit that the pupils finally beat their masters.

Good cavalry is the most valuable species of troops. Take two generals of equal capacity, with fifty thousand men each. Let one have nothing but infantry and artillery, the other nothing but cavalry and its proportion of batteries. The cavalry general in one week's campaign shall do what he pleases with the other, cutting his communications, harassing his pickets, starving him out, and keeping the field with impunity, when his antagonist is forced to retreat to his fortifications and ships. Even a due proportion of cavalry will do wonders toward the success of a campaign. The war of the Rebellion is full of such instances. Stuart's cavalry at the commencement of the war, Sheridan's at the close of it, each in its way, was the instrument with which the respective commanders-in-chief won their most important strategic victories.

In fact, the whole of the disasters of McClellan and Pope in 1862, might have been averted had we possessed cavalry. But, practically, we had none. What there was was scattered among corps and division infantry commanders, who knew nothing of its use, and who heartily disliked it. The infantry men sneered at it, and the universal opinion was that cavalry was useless except for outposts and orderly duty—in fact, to look at the enemy and run away. But in that, as in many other things, the enemy taught us a valuable lesson. By experimental proof it was knocked into the heads of our wise leaders that cavalry *was* good for something. Stuart's raids and charges, Morgan's rapid successes in the West, showed that the enemy knew how to use cavalry.

And so at last our cavalry was gathered together from its places of contempt, and banded together in one corps as it should be. Its progress from that moment was positively marvellous. Not a disaster befell the cavalry of

the Army of the Potomac from the day that it was first drawn into the cavalry corps. It went on from victory to victory.

The progress of the North and South during the war affords material for many valuable lessons for our American cavalry of the future. Our early disasters, the South's early successes arose from opposite modes of recruitment. Their cavalry owned their own horses from the first. Ours did not.

A man who owns his own horse generally knows something about riding him. If he's a poor countryman he's quite certain to. So that you start with such a man with a great advantage. You don't have to teach him how to take care of a horse. All he has to learn is military riding, the combination of hand and leg. He soon learns this. The sabre he is only too eager to learn. If there is a good instructor, who can convince the most skeptical of the value of swordsmanship, by a few smart raps with the single stick, your men will be practising in season and out of season. It is surprising in how short a time intelligent able-bodied men will become fair swordsmen. Countrymen, too, who own a horse, have generally a gun somewhere, and are pretty fair shots—a second requisite for a modern cavalryman.

The South started with these advantages in their cavalry service.

Our troopers, on the other hand, came from anywhere and everywhere, and so did the horses. Some knew how to ride, others did not. Many were townsmen, and had never had a gun in their hands.

Prudence would have dictated drilling these men carefully before sending them into the field, and especially teaching them to ride.

The practice was to let them lie in barracks, here, there, and everywhere, drilling on foot, and with no arms but sabres. Threats of disbandment were constantly kept over their heads, and desertions were frequent. Then at last, all in a hurry, horses and revolvers

were issued, and the whole regiment marched to the front next day, armed with weapons that they knew to be useless in the woods against carbines. The consequence was that men put on picket with revolvers became demoralized when they found themselves picked off at leisure by long-range carbines. They were ready for a stampede at the first opportunity.

I remember well in 1862, when the regiment to which I belonged was still in its green stage, coming across the Third Indiana Cavalry, recruited on the Southern plan. It was already good cavalry, though no longer in the service than ourselves, and made for itself a splendid reputation even while attached to an infantry corps. Every man owned his own horse, and, as a consequence, *took care of him.* In the last four words, italicised, lies the difference between good and bad cavalry.

The defects of the system of men owning their own horses are easily remedied. They should not be accepted into the service, unless the Government recruiting officer judges horse and man to be sound, and capable of active campaigning. Doctors are appointed to examine the men; now veterinary surgeons should examine the horses.

And in order to combine the excellencies of the remount depots with those of the quickly-raised volunteers the horses should be replaced to the men in case of wounds, or breaking down, as they are in ordinary cases in an ordinary regiment.

We are convinced that this plan is the only one by which America can supply herself with abundant cavalry in future wars, at the least possible expense, and with the greatest efficiency in the shortest time. Infantry and rifles are quickly raised, and, in the hands of old officers, soon become tolerable soldiers. It requires far less training now to make an infantry man than in the martinet days of Frederic the Great. But cavalry has always taken a long time to bring to anything like efficiency, except in the instances where it has been composed of farmers and hunters owning their own horses.

Starting on a basis of good natural riders, it takes no more time to drill than infantry. In the instance of the Southern cavalry it attained a marvellous efficiency in six months. In India, moreover, the irregular native cavalry, which is raised on the same plan, each man furnishing his horse and arms, has for many years been considered the best of its kind in the world.

Any scheme of military service which requires long drilling and costly preparation is eminently unfitted for the United States. The only regular forces we have at present capable of sudden expansion are our artillery regiments. Every other species of troops we shall have to raise hurriedly in any future war. Is it wise to neglect the teachings of our last contest and court a renewal of the same humiliations and defeats as marked the years 1861 and 1862 ?

The American intellect proved itself capable then, like the Roman of old, of learning how to conquer from a victorious enemy. But the Roman kept his lesson in his heart and used it in his next war. And we are forgetting ours already.

The salvation of our country in the future lies in a good militia system rigidly enforced. The powers of such a system have been exemplified by Prussia in her late wars, and by little Switzerland, for three hundred years or more.

It is not that militia regiments are good for much, in themselves, in actual warfare, but they supply a raw material for soldiers already decently drilled. A very little camp and picket duty will soon turn such men into soldiers, and volunteer regiments can be raised like magic from among the old militia organizations.

If a rigid militia system were enforced among all owners of horses, high and low, compelling each man to become a militia cavalry soldier, or furnish a substitute, the raw material for excellent cavalry would be found plentiful in time of war. In the country every farmer would send a man who could ride to train-

ing, and even in the cities, the very places where you would last expect to find the materials for cavalry, they exist in numbers little thought of.

It is not the tailors and shoemakers, the factory workmen and clerks. These poor fellows go into the cavalry willingly enough, and are as useful as dummies for a couple of years. It is the hackmen, the omnibus drivers, grocers, and bakers, the hundreds on hundreds of men who own horses for business, the express companies and car monopolies, and last but not least, the rich men who keep horses for pleasure, that ought to be made to do military service, as in the Middle Ages.

At present in the single city of New York there are probably forty or fifty thousand horses in active employment, and yet the whole milita cavalry of the city is comprised in one slender brigade, that never turns out over three hundred strong, and what does turn out is a "holy show." The men who own horses seldom join, and the cavalry men hire their horses from the livery stables for a day's parade. Is it any wonder that they form a ridiculous and pitiful exhibition. And yet even this small nucleus became useful in the war, and produced from its ranks that excellent cavalry officer, Brevet Major-General Thomas C. Devin. Under a better system the North might have turned out as good cavalry as the South at the beginning; but as it was, the riders were all in the infantry, and the cavalry was raised too late to avert many a crushing defeat.

Let us change all this in the future. This is not the place to propose a detailed and specific system; but the fact being once recognized, that every man owes the State his service to defend it from invasion, every owner of a horse owes the services of his animal in like manner.

It may never be necessary to resort to the draft again in actual warfare in this country. The probabilities are strong against our requiring such an immense army as that of 1865 a second time. But the light sacrifice of

ease imposed by milita service is a positive duty, and ought to be enforced on every able-bodied man who does not know his drill already. The Prussian practice of drilling every male citizen for a period of time, becoming less and less onerous as he learns a soldier's duty thoroughly, and finally leaving him a well-instructed man in the ranks of the reserve, is so obviously wise and just that its spirit should pervade our future milita system.

And, with every horse owner a cavalryman, our cavalry would spring to arms all over the country with even more rapidity than the infantry. Enthusiasm is more easily raised for mounted service. There is a dash and romance about it that takes young men especially, and young men are the best material for cavalry.

OFFICERS.

Taken from a grade of society no whit above the men, and in many cases illiterate as well as totally ignorant of military science, the first batch of officers sent out in our civil war were compelled to keep at a great distance from their men to preserve the semblance of discipline. Our system possessed only the faults of the English, without one of its counterbalancing excellences; and the consequence was that we were beaten out of our boots till we learned to follow the French system of promotion from the ranks.

In an aristocratic country, with well-marked divisions of classes, the soldier, being a peasant, who can never be anything but a peasant, submits to ignorant officers, if taken from a class above him. The officer is an educated man, and belongs to a society whose ban on incapacity and cowardice is an effectual spur to advancement in his case. An English gentleman very soon becomes a good officer. But the case is very different in America. No such marked distinction of classes exists here, and lucky for us it is so. Our only aristocracy is that of intellect; that is to say, the only aristocracy that is universally recognized, everywhere and at all times. Wealth in fam-

ilies is transient, seldom lasting three generations. The great families of the Revolution have fallen, and small ones risen to greatness.

But intellect and education command respect almost unconsciously. The very tones of voice of an educated man strike the ear as different from those of a boor.

And in this it is that the merit of West Point as a school for officers lies. It takes them in rude boys, from any and every station. It turns them out educated gentlemen; and, as a consequence, the old Regular Army was always in excellent discipline The men felt that a great gulf divided them from their officers, and the latter could afford to be kind to their men without fear of lax discipline.

But the system which answered for a small Army, and which supplied that Army with gentlemen for officers, broke down with a million of men, until we began promoting from the ranks. Then we procured good officers, and not till then. Did we procure gentlemen? In many cases, yes. In some, no. Several of the first lot of sergeants raised to lieutenancies turned out drunkards, and were dismissed the service within a year after. I use my own regiment to illustrate the point. It was an average representative regiment, and its history was repeated in that of many another of my acquaintance. But it was found that in most cases gentlemen had been hidden in the ranks; and I can remember several instances where the change of manners was surprising, from a first sergeant to an officer among officers.

The South followed our own system. But inasmuch as the institution of slavery had created in the South a privileged and highly cultivated order, their officers of volunteers were, as a class, superior to ours at the commencement of the war. They also promoted from the ranks, I believe, but without the same success as attended our experience. Their material was not so intelligent, and the aristocratic system suited them best.

What, then, would the lesson of the war seem to be on

the officering of our cavalry of the future? Plainly, that with a people fairly educated as a mass, officers should be raised from the ranks. Intelligent men, I have often noticed, will follow such a one readily enough.

But how about the commencement of a war? Men cannot be raised from the ranks till they have shown their fitness for commissions.

The answer obviously seems to be to insure, by some means, the appointment of well-educated men for your first lot of officers. The answering of two or three questions on tactics should not be all the examination required of a would-be officer at the commencement of a war. Tactics are very soon learned, but they form but a very small part of an officer's duty. The largest part requires intelligence and extensive reading to supply the place of the experience that comes later. Men of intelligence and bravery, promoted from the ranks to associate with educated gentlemen, soon catch the tone of their manners and become a credit to the service.

But in this matter, as in many others, a good colonel is the father of his regiment. The influence of such a man is something wonderful. Good colonels make good regiments, and good captains make good companies. I am far from being convinced that a green regiment would not be infinitely better off in our service in war if it only had a colonel, an adjutant, and twelve good captains for the companies, leaving the junior commissions to be filled up by the colonel, after time enough had elapsed to show the best men.

Sergeants and corporals are amply sufficient to do all the guard duty. The commissary and quartermaster-sergeants already do all the work of their departments, and their principals just sign their names.

The hope of promotion would be a great incentive to green troops to observe discipline and to behave well in action, and the country would be spared the shameful abuses of the last war.

And in sending reinforcements to the field, Heaven grant that they may not be organized into fresh regiments, as they were, at ruinous and suicidal cost, in 1864. Sent as recruits to fill up the gaps of the veterans, such men pick up their duty in a very short time under the teachings of their comrades.

Formed into new regiments to swell the vanity of more of those insolent incapables who so foully disgraced their uniform, even to the last year of the war, such regiments indulged in stampedes that a member of the old corps would have blushed to be involved in.

At Five Forks I remember such a green regiment, six hundred strong, driven back in a disgraceful panic after less than five minutes' firing, with their colonel, a fellow called Middleton, at the head of the fugitives. An old regiment, depleted by the war to only forty-five carbines, was then advanced, and held the position till dark which the six hundred had vacated. But then their officers had risen from the ranks, and the men knew them; and the officers of the Twentieth Pennsylvania Cavalry were appointed from civil life, and the first to quit the fight.

In that single instance lies a volume of teaching on the selection of officers.

If you can get old Army officers among your captains, do so by all means. But if a man has not served, see to it that he has a good education; for as old as the Romans there is a proverb which says that "Learning softens the manners." And there is a good chance that a gentleman will do you credit—not because he's braver than another, but because he daren't run away for fear of the people at home.

And above all, as the last piece of advice given us by the war, promote from the ranks.

DRUNKENNESS.

I am not a "total abstinence man"—as far from it as can be; but still I hold that drunkenness is a vice so utterly degrading to a gentleman, which every officer ought to be, that a man with intemperate habits ought to be

stricken from the rolls of any army. If the officers of a regiment are gentlemen in the true sense of the word sober and courteous, there will be no trouble to enforce temperance in the command; but if officers get drunk in public, the men will follow when they get a chance. A truly temperate colonel is a tower of strength to a regiment. Not an austere total abstinence fanatic. Such a man does more harm than good. But a true gentleman, by example and precept, will raise the character of his officers by unconscious steps, and prevent disorder, instead of vainly trying to stem it after it has risen to its full height.

MORAL DISCIPLINE.

If our cavalry of the future are fortunate enough to get such colonels, their regiments will gain proportionate reputations, not only in camp, but in the field. Well-ordered regiments always fight well. Oliver Cromwell's Ironsides, Gardiner's dragoons in English history, Havecock's "saints," Mahomet's army of so-called fanatics, the Swiss infantry in their wonderful success over the Austrian gendarmerie, all are instances of the resistless power of sober, religious men, banded together by moral discipline. Such corps have won the greatest successes of ancient and modern times, in all cases.

I cannot recall an instance in history, in which one army prayed before going into battle, and the other feasted, where the feasters were not overthrown; and the battles in which such was the state of affairs are innumerable.

Moral force is an engine that has never been rated at its true value in war. Whenever it has been tried, it has proved all-powerful. It is the basis of all rigid and effectual discipline. Martinetry has always proved a failure in the end. Its spirit is totally opposite, and only drives men to mutiny. But moral discipline convinces men that a certain thing is right; and under that thought they will submit to restrictions and regulations that from a martinet would be utterly intolerable.

The best disciplined regiments are those that have the least number of punishments. An officer who cannot control his men without brutality, is unfit to be an officer. But natural disciplinarians are very rare, and experience is a slow school; some men never learn anything in it.

LOGISTICS—FOOD—FORAGE.

In the matter of food, nourishing enough to support the soldier, and light enough to enable him to carry several days' allowance, there is much room for improvement in our service. The United States ration is plentiful, sometimes too liberal, but it fails in portability. Pork and hard tack, a pound and three-quarters a day, constitute our field ration, with a due proportion of coffee and sugar. It is very bulky and contains much waste matter. The best part of it is the coffee and sugar. The allowance of these is sufficient, with a very little experience in their use; and a man can carry ten or twelve days of coffee rations without difficulty. But the practice in the Southern army, of issuing flour instead of bread, made their rations much more portable. As it is, eight days' rations of pork and hard tack is a very bulky mass, inconvenient to carry. Once or twice, when starting on raids, we had to load ourselves with that amount of food, to our great discomfort. Flour and other soft food makes much better rations than hard square biscuits, as regards portability.

In this respect, as in the saving of ammunition, we may again take a lesson from the Prussian wars of this decade. They have introduced into warfare a new element in the ammunition business. So in logistics they have invented a sausage. Not an ordinary sausage, but one composed of pease meal and meat, chopped up together, and containing in itself all the constituents of a full ration. These sausages are the requisite size and weight to make a meal; and their nutritive qualities are wonderful in proportion to their weight. If not perfection, they are yet a move in the right direction. One great advantage of them is that they are very easily

made, and that by their means a great deal of food otherwise wasted may be utilized; for they absorb fat and lean, meal and flour. In fact, almost anything may be put into a sausage. A single chopping machine, following an army corps, would be able to keep up a full supply of these rations; and for long expeditions the sausages are much better to pack and carry than hard tack and pork.

The quality of the meat, whether it be beef, mutton, pork, or whatever else, is a matter of indifference; as also whether pease meal, bean meal, corn meal, or flour, be the vehicle in which it is diffused. The economy seems to be in the prevention of all waste, the juices of the meat being absorbed by the flour. The sausage may be roasted, fried, or cut open and the contents poured into water, making a thick soup or porridge. In the summer time the meat must be dried or salted to enable it to keep. In the winter no such precaution is necessary.

This sausage has enabled the Prussian army to release from the duties of guarding communications many a man whose services were valuable at the front; and we cordially recommend it to our cavalry of the future, if our word may chance to be adjudged as of any value. Not that we desire to urge a mere wooden imitation of the German system. Imitation implies inferiority. But we submit that the principle of combining the two parts of the ration together is a good one, and tends to prevent waste and economize weight.

In regard to the carriage of rations, the experience of a single campaign is sufficient to decide one thing—that the haversack, as used in the United States Army, while very good perhaps for infantry, is a poor thing for cavalry. It is not nearly strong enough to stand the jolting of a trotting horse, and the shoulder-strap is continually giving way. Moreover, whatever the theory of the inventor and the War Department may be on the subject, practically you cannot get a cavalry soldier to wear it over his shoulder. He will tie it to his horse, where it

dangles, bumping and crashing, till the band gives way, and down comes the load.

But our ready-witted men soon learned to provide themselves in a better manner. They used to take the white inside bag of the haversack, and make of it a trio long narrow bags, one for coffee, one for sugar, one for salt. The pork they wrapped up in a piece of old shelter tent, and strapped to the saddle-bow. The haversack, with the hard tack inside, was rolled up and strapped on the cantle above the grain bag, and the nose bag was utilized in the same manner. But, with the best management, the hard, square biscuits were very ugly things to carry, and it is for that reason that flour or meal is so far preferable. But the coffee ration is the best part of the whole. No one who has not been through the hardships of real campaigning can rightly appreciate the comfort of a cup of coffee to a weary soldier after a hard day's tramp. Coffee and a quiet pipe have done more to comfort our men on long raids than anything else; and if nothing else in the way of provisions is carried on wheels, a single wagon laden with coffee and sugar will be found to amply repay the trouble of its guarding. Men can forage for everything except that.

In the matter of forage there is one thing to be said. In the United States cavalry there is no provision made by which the men can carry three days' grain. They did carry it repeatedly, but they had to provide the means themselves, and in a way far superior to the old-fashioned forage bags of European cavalry.

The same invaluable piece of old shelter tent came into play here; and a long, narrow bag was sewed up, which just held thirty pounds of grain, and then resembled an immense sausage. This was strapped across the cantle of the saddle, exactly as the old valise, the centre strap being drawn tight enough to clear the bag from the horse's back. By this method we carried three days' grain with comfort to man and horse; the load lightening every day, and the narrowness of the bag ren-

dering it easily compressible into a tight, compact mass. Such a bag as this, made of stout canvas, would wear for years; and if a strip of leather or canvas were fastened down one side longitudinally, with intervals between it and the bag to pass the straps of the cantles through, all danger of the load's slipping to one side or the other would be avoided.

CARE OF HORSES.

With regard to the question of forage, there is one thing to be said. In campaigning in a country where Indian corn is the staple horse feed, it is poor economy to send out car loads of oats for cavalry horses. When a raid comes, the animals have to live off the country; and the change of food is very apt to "heat the blood," vulgarly speaking. In the winter time, when there is much mud, it predisposes the horses to "scratches" or "grease heel," and when once *that* breaks out on a winter raid, the horse has to be abandoned.

The immense number of animals that were perforce left behind from this cause on Sheridan's last raid, in March, 1865, almost exceeds belief. The author himself started from Winchester on an excellent horse, with a second pretty fair animal, led in the pack train; but both broke down dead lame on the second day after passing Waynesboro, owing to the mud. While on the macadamized pike, up the valley, they went gallantly; but the mud brought the feet of both of them into such fearful condition that they had to be left. And three-fourths of the lameness in these cases was due to the change of feed from oats to corn, the latter being far more carbonaceous than the former, and therefore heating and predisposing to disease.

Cavalry horses are liable to several ailments. The principal of these, in summer, are sore backs and a disease known among cavalrymen as "the thumps."

The latter appears to be a species of heart disease, induced by long marching in hot weather. The sides palpitate suddenly at intervals, as if some one were giv-

ing thumps to the animal (hence the name), often in perfect condition, and a splendid horse; and then all of a sudden he will drop dead in the road, without a moment's warning. For "the thumps" I know of no remedy but rest; and as that cannot be given on a raid, the poor beast generally dies.

Still, an officer observing a horse in his troop afflicted with this disorder may often save his life, by ordering his rider to dismount and lead him for a day.

Bleeding from the mouth is often useful in this complaint. The same operation which is hurtful to a human being is often of benefit to a horse, whose blood runs so much more rapidly than ours does, and half of whose disorders arise from overheating of the blood.

If "the thumps" be a difficult thing to avoid, the same cannot be said of sore backs.

With the McClellan saddle there is very little excuse for these. This saddle, if the requisite care is taken in its use, is one of the best in the world, after the Mexican and Texan. If the blankets are kept smooth, and the load on the saddle carefully adjusted, so as not to chafe, there need be no sore backs with this saddle. Should one commence, however, there is nothing in the world to cure it like plenty of warm water and castile soap. "Cleanliness is next to godliness" in wounds.

I have found that a piece of coarse gunny bagging, laid under the blankets, will generally effect a cure in sore backs, even while marching. The remedy is well known among the old regular cavalry on the plains, and I have been surprised at its efficacy. The reason would seem to be that it keeps the harsh woollen fibres of the blanket from aggrevating the old sore, and allows it to heal.

With regard to the cure of scratches or grease-heel, it is a difficult, almost impossible task, if the disease breaks out when on a long raid in wet muddy roads. If lying in camp, and with any means of securing a dry stable, it is a different matter

In this, as in sore backs, castile soap and warm water are the golden remedy; and if the animal is standing in a dry place, it is well to bandage the pastern, between the times of washing, with a rag greased on the inside. It keeps out dust and dirt, and preserves the scab soft and pliable, while the new skin forms.

But if its cure on a march in muddy weather is difficult, its prevention is not so. "Scratches" in horses are a form of disease similar to chilblains and chaps on the human frame. They are prevented by warmth, dryness, and oiling or greasing the skin.

When a long march in the mud has been executed, if the horses are left standing out all night, whether their legs are clean or not, they will get cold. If you feel a horse's legs towards morning, they will generally be found cold. A long continuance of cold wet feet and legs always induces scratches. When a man goes out and gets wet, he comes in and changes his clothes, and puts on dry stockings, if he can. His horse can procure the same comforts with perfect ease, if his master knows enough to give them to him. A slip of old blanket made into a bandage, and carefully and closely rolled around the legs, beginning at the pastern, will save every horse's heels from scratches. Four such strips, warmed and dried at the fire, will put such comfort into the animal as to enable him to go through a mud raid unharmed. They weigh little or nothing, and are easily carried. With these, and a strong horse cover, weighing about ten pounds, a horse can go through a winter campaign without danger. The extra weight is paid for in warmth and consequent strength to the animal.

The heels and pasterns should be often hand-rubbed after cleaning, and a little grease rubbed in every now and then. Such a plan will save the whole force from scratches, if the use of bandages is combined therewith.

We have touched but lightly on the most general troubles with cavalry horses. The animal in a state of worse disease belongs to the province of the veterinary

surgeon, a being very much needed in our cavalry of the future. But sore backs and scratches are so common, and so easily avoided, that we have mentioned them. The latter may be always prevented by careful cleaning and dry night quarters. If a general officer quarters his men for the night in mud holes, he has only himself to blame for his horses' falling lame.

If our cavalry of the future is recruited from among men owning and riding their own horses, there will be little trouble on the score of cleanliness. Every man who knows anything about horse care is aware that a good cleaning is almost as good as a meal to a horse, and that no horse kept in confinement will grow fat or nothing but food, unless he has therewith a liberal supply of currycomb and brush.

But if recruited as in the last war, the horses will have to be looked after most carefully by the officers, or the men will neglect them. Stable duty is perhaps the most necessary, as it is the most disagreeable part of a cavalry officers' duty. And the manner of saddling demands equal care. Careless saddling is the fruitful cause of sore backs. A wrinkle in a blanket, a strap getting under it, will start a sore hard to heal.

SHOES—SADDLES—BRIDLES.

With regard to shoeing, one thing is to be said, and only one thing. As long as it is not made the rigid rule, never to be disregarded, for every man to carry a full set of spare shoes for his horse, with the complement of nails, in the pouches of his saddle, so long there will be constant trouble. General orders are always recommending it; but I never yet saw such an order fully obeyed. As to the form of shoes, I should decidedly recommend plain flat fore shoes for summer, with low heel corks on the hind shoes. These enable a horse to stop short with much more ease, if suddenly pulled up. In the winter, both toe and heel corks on all the shoes should be used in slippery ice countries, as Canada. In

mud countries they are not necessary. But, as our next war of any magnitude will probably be in the north our horses will have to be roughed with toe and heel-corks for winter campaigning.

Saddling is a different matter. On good saddling and packing depends all the efficiency of a cavalry force. Your men may be well armed, splendid swordsmen, and dead shots; their horses may start on the campaign full of life and vigor; but, if the saddling and packing are bad, sore backs will soon dismount all your cavalry, and render them useless.

During the Crimean war Captain George B. McClellan was sent to Europe to inspect and report on cavalry and infantry weapons, accoutrements, and organization. It is a significant fact that that excellent organizer could find nothing in all Europe, after due examination, worthy to compare, as a cavalry saddle, with our own Mexican or Texan tree.

The McClellan saddle, which is a modification thereof, is far better than any in use in Europe. This Mexican saddletree is the fruit of the experience of centuries. It is the offspring of the Turkish and Arab saddle, very slightly modified. It came into use among the people in whose country the horse took his rise, and it is, in all its modifications, a miracle of comfort and security to the rider. The only objection to it is its weight—a defect by no means remedied in the McClellan saddle.

There is far too much toggery on this saddle. The flaps, the sweat-leathers, the saddle-bags, are all useless dead weight. As for the saddle-bags, they are about as useless and foolish an appendage as I ever saw. Again and again have I seen them thrown away by men whose practical experience had taught them; and the whole reason is that they are too small to hold anything. Take them away and give two light simple canvas bags of twice or three times their size, and you give a man somewhere to put his food. The prime trouble with all military saddles is the want of room for pro-

visions and forage, whereas that is all they ought to be made to carry.

A man wants no overcoat in summer campaigns. By universal consent it is thrown away before many days out, at the risk of wanting another. I never knew this to fail. All the weight a man carries besides rations and forage is himself and arms, one blanket, a piece of shelter tent or poncho, a shirt, drawers, and socks, a towel, comb, and piece of soap. The sleeping blanket and tent are put under the saddle by all old soldiers, and prevent sore backs instead of making them. But forage and food form the weight. As it stands, the men carry them the best way they know how. All the Government gives them is one haversack. This ought to be changed. Two good-sized canvas saddle-bags, with a girth in connection, would hold eight or ten days' provisions with ease. The girth would keep them down to the horses' sides, and save horse and rider from the flapping of his present load. Moreover, a cavalry soldier on his first day's march would no longer resemble a trussed turkey, incapable of motion, and could mount and dismount as easily as he does now with "light saddles."

The bare McClellan tree is quite light and convenient. It's the leathern toggery that weighs it down. The same bare tree is immensely improved in appearance by a brass rim on pommel and cantle. This also preserves the edge of the cover from wearing out. A McClellan saddle always goes first at the edge of the cantle, and, once the rawhide cover is gone, the saddle soon racks to pieces. The Texan saddle, which strongly resembles the Mexican, would be better than the McClellan for troops. There are no buckles anywhere upon it. Instead of straps, leathern thongs are used to tie things to pommel and cantle. The broad, flat horn in front is quite a convenience for many purposes, especially to go to sleep on in long night marches. The girth fastens with two rings and a long strap between, being secured with an easy slip-knot.

But the Mexican form of girth has one disadvantage. Starting from a triangle of leather, which embraces pommel and cantle, it has a tendency to press on the ends of the saddle and produce sore back. If, instead of this, a surcingle were used, passing over the middle of the saddle, but fastening like the girth with the two rings, it would be far preferable. The ring fastening has this great advantage: You can girth any horse with it, no matter how he swells out. He cannot resist. Every turn of the strap through the rings doubles your strength like a pulley. The surcingle is far preferable to the girth as a mode of securing a saddle. It is so used by the Guachos all over South America.

One thing about the McClellan saddle as issued is radically bad. It has no breast-strap, and it has a crupper. This ought to be reversed. It may do with mules, who have no withers; but in nine horses out of ten, outside of Indian ponies, the fault lies the other way.

In active service the men universally threw away their cruppers in our war, and many who had slim-bellied horses were forced to buy breast-straps, by hook or by crook. Many used their surcingles for the purpose, but had to give it up. A breast-strap to a cavalry horse is almost an indispensable necessity. In ascending hills his load is almost sure to slip back, and much botheration ensues. With a breast-strap, the girth can be loosened and the horse much eased. Care must be taken to avoid losing the blankets in this case. More than fifty times I have seen the saddle blanket under a carelessly put-on saddle slide slowly back, till it gently dropped over the croup, the rider being quite unconscious of his loss till warned of it by others. This is most apt to occur with slim-bellied horses. The blanket should be secured to the saddle in such cases.

The stirrups of the McClellan saddle are good and bad. They have good points, but sadly need improvement. The intention of the hood is excellent. It is to

keep the foot from slipping through the stirrup, as well as to protect it from bushes, etc. In practice a man is very apt to get his foot stuck fast between the stirrup and the hood, and to find it worse than the open one for that reason. This part of the objection is easily remedied. A broad strap of leather, nailed across the interval from the bottom of the stirrup to the bottom of the hood, at once removes all the inconvenience. It ought certainly to be done in future in all cases.

The second objection is much more serious. It lies in the material of the stirrup-wood. Wood exposed to rain, wind, and weather, soon rots. Especially around rusty iron bolts does it become unsound. Twice has it happened to myself to have a wooden stirrup break down under me, once causing me a heavy fall; and I have seen the same thing happen to others so often that I at one time took a prejudice against it and used the open iron stirrup as safer. But there is no denying that the open iron stirrup gives nothing like so firm a seat as the hooded wooden one. The necessity of pressing upon it in order to keep your feet from slipping forward deranges the seat; whereas in the hooded stirrup the foot hangs as easily as when riding bareback.

I have come to the conclusion that a light iron stirrup hooded is better than either, and the wonder is that it has not been issued. It would be cheaper in the end, as it would last.

The McClellan saddle is a very poor one as far as lasting goes. Two years knocks all the glory out of it, and there are so many useless little bits of toggery about it, which are constantly getting lost or broken, that it is a wonder it has held its ground so long. But, as in the case of Colt's revolver, a single excellence has counterbalanced its many defects. It is comfortable to ride in, and if it fits the horse any way near, it never gives sore back.

Take it all in all, it is the best military saddle yet in use. The Texan is still better in its way; but still,

strip the McClellan saddle to the bare tree, use a leathern surcingle with a ring and strap girth and a breast strap- throw a pair of useful saddle-bags across the seat, and girth them a little in rear of the saddle girth, and you have as good a cavalry saddle as a man need wish for • Put a long grain bag behind, and all is complete.

With regard to bridling, the first thing that suggests itself is this, that all our military bits are far too heavy, as also the head gear in general. There is a bridle in use in Buenos Ayres for mounted troops that is excellent in this connection. There is no halter. Instead of this, a leathern collar is used, which goes just back of the ears. The French Chasseurs d'Afrique, the best cavalry of their country, use the same collar instead of a halter. No horse can slip out of it, it fits so close, though not tight. To the sides of the collar the cheek-pieces of the bridle hook in two little rings made for the purpose

This bridle is wonderfully light and strong, and by far the simplest we have ever seen. Simplicity is a great recommendation for military purposes. It saves time in bridling, a great object on picket duty especially, to give the horses as much time to rest and feed as possible, without danger of a surprise finding you unready.

The bits of Mexicans, Guachos, Turks, and Arabs are alike savage things. Our military bits follow them too much. The lighter a bit, the better. A thin wire snaffle mouthpiece, quite straight, with two long but very light curb branches annexed to it, is the best bit I know of for military rough riding. It very much resembles the Pelham bit. The reins should be single, and transferable to either snaffle or curb to suit mouths.

As regards appearance, I am decidedly of the opinion that all metal work, buckles, curb branches, etc., intended for show, should be of brass, not steel. The difficulty of keeping steel clean in the field is almost inconceivable. At the end of the war, our cavalry, with their steel scabbards, blued carbines and pistols, presented the appearance of a pack of ill-clad bushwhackers, with

dirty weapons and dingy saddle trappings, impossible to make smart.

DRESS.

The United States cavalry uniform is quite comfortable, no doubt. But there is as little doubt that it is by all odds the most completely hideous under the sun.

Especially is this the case with the present regulation hat. Without its brasswork, in the simplicity of its native felt, it is a steeple-crowned reminiscence of Praise God Barebone and the Rump Parliament, anything else but martial and heroic. Cocked up at one side, with its shabby-looking brass ornaments, and one little mangy feather, it reminds one of a broken-down brigand. Anything more hideous was never put on a soldier's head.

I remember well, that when first my old regiment was mounted and sent to the front, the road was strewn for miles with "that d——d old hat," as our men called it, thrown away as soon as our parade days were over. Afterwards, for a couple of years, there was no sort of regularity in head coverings. A dress parade of one of our regiments reminded one of Donnybrook Fair, as regards hats. Every sort of battered old tile was used, and the effect was ludicrous. But when Sheridan took command, by a general order he compelled the adoption of the forage cap, and after that there was no trouble. True, the regulation forage cap, as issued, was even more worthless than the hat, in point of make. But the sutlers sold very nice little caps of similar pattern, and nine-tenths of the men preferred paying two dollars for a decent and serviceable cap, to drawing one at sixty cents, literally worthless.

Army caps ought to be made of cloth alone. The visor of leather is only a nuisance. The red fez of the Zouave is the most comfortable and convenient of any. All the contractors in the world cannot make it stiff and ungainly. The kepi, on the other hand, as we use it, is a miserably poor cap, which the first shower puts out of

shape, and ruins for good, on account of the leather and pasteboard.

For the cavalry of the future we should decidedly recommend one of these patterns: the fez with its tassel, or a cap of the same kind as the ordinary Astrachan skating cap, something like the old turban or "pork-pie hat" ladies used to wear.

Both are comfortable. They can be used to sleep in. They are jaunty and soldier-like. If ornamented with lace, or in different colors, they are very handsome. And lastly, the rain will not spoil them, and the contractors cannot make them ugly. A disk of cloth, with a broad band at right angles to its edge, is the fundamental principle of both, and there need be no pasteboard in them, to warp in rain and sunshine.

When we come to the rest of the cavalry uniform, we find but little modification necessary. The uniform jacket is hideous simply from the yellow lace. Strip that off, cut down the collar to one-half the height, and you have a neat, simple uniform. The service uniform of the cavalry corps under Sheridan was all that could be desired for work. Under a general order the men wore only the flannel blouse instead of the dress jacket, and their looks were decidedly improved thereby. This was well enough. But by experience the men learned one thing, that trousers are not the things for cavalrymen, especially in winter. Almost without exception they purchased jack-boots, and found themselves vastly benefited by the change. In the cavalry of the future the lesson should not be lost.

After careful comparison of cavalry uniforms in all parts of the world, the one that strikes the eye as best adapted for work in all weathers is a modification of the Hungarian hussar dress.

The light breeches and Hessian boots are the very things for riding. They give to the legs a grasp on the horse impossible in loose trousers. In muddy weather there is no bedraggled cloth to hang about the feet and

ankles. They are equally good for dismounted fighting in brushwood. The dolman need not of necessity be tight, and the hanging jacket is an excrescence. A spencer cut in to the form, neither tight nor loose, reaching to the saddle, and barred across the breast, is an equally common form of the dress, and the fur cap is not high or cumbersome.

We are decidedly of opinion that the spencer, with tight breeches and boots and a light cap, is as good a uniform for real hard work as can be made. Everything is close, and nothing is left to fly away here and there. With regard to the color, I suppose we shall have to stick to the dark and light blue; but if there is a color not now in use which is good for active service, it is gray. An unfortunate prejudice will no doubt exist against it for many years yet in the United States, on account of its having been the uniform of the rebellion; but since it has been adopted as the militia dress in many States of the Union, we hope that the prejudice will die away. Apart from the associations, it is an excellent color. It has the great advantage of being unlike any other national uniform. Our present dress is nothing but a copy of the Sardinian in colors, and the sooner it is changed the better. Gray possesses the quality of invisibility in action, a most valuable one. Our own men will often remember the ghostly gray lines of the rebel infantry in the battle-fields of the past, and how difficult it was to catch sight of them. And with regard to prejudice, if our enemy has a good thing in his possession, and we can use it, we are foolish to let prejudice interfere with our benefit.

The disadvantage of gray is that it gets dingy and shabby soon. But this objection is remedied by trimming it with black. Any uniform of a single color gets shabby when the color fades. It is the contrast of trimmings that makes an old uniform look respectable to the last. Gray or bluish-gray barred with black makes a neat and very handsome uniform. Its effect as seen in the New

York militia, in several of its regiments, is very soldierly, neat, and handsome. Any uniform barred across the breast has a fine effect, and as such are generally double-breasted, another item is gained in comfort and warmth. A soldier's coat ought to be double-breasted. It lasts longer, looks better, and keeps the place warm that most needs it, his chest.

As for material of clothes, there is but one article in a cavalryman's dress that needs special mention, *i. e.*, his trousers or breeches, whichever they be. Cloth very soon wears out under the incessant bumping of a cavalry soldier. A pair of ordinary trousers goes in three weeks, and the reinforce of cloth will not save a pair over two months. The reinforce, to be of any good, must be of leather, as in European cavalry. A single pair of trousers will then last a year and look decent, where three are now insufficient.

The sooner the Government discards trousers and adopts tight breeches for cavalry use, the better. Jockeys, hunters, and grooms, all those whose avocations lead them among horses and who desire a firm seat, wear breeches and boots. The cavalry should do the same. The material ought to be buckskin if possible; but as that is far too expensive for private soldiers' use, its common substitute, corduroy or moleskin, is equally good in its way. A still cheaper and even stronger material for breeches to stand hard usage is canvas or sailcloth. This is almost everlasting, and costs but little, besides being easily cleaned either by washing or pipe-clay. If ever introduced, it will be found inimitable in its way.

WASHING AND PREVENTION OF VERMIN.

On long summer campaigns it quite frequently happens that the men are compelled to march and fight for weeks together without changing their underclothes. Washing is a luxury that those clothes never know for weeks at a time, the allowance of soap being small and irregular. The only time it is possible is when a day's rest near a stream comes, and then it is hastily and im-

perfectly performed. The consequence with woollen underclothes is very simple, *i. e.*, vermin. They accumulate in a miraculously short time, and are almost impossible to get rid of. The greatest care is hardly sufficient to avert them in many cases, and they spread like magic, forming an intolerable nuisance, and a very wearing hardship to the sufferers.

Now from very disagreeable and painful experience the writer can testify that woollen underclothes in the summer are a terrible nuisance from this cause. If all the medical men in the United States were to swear to the contrary, he would still maintain that woollen underclothes for summer wear are totally unfit for soldiers. They may possibly avert some colds, but they are certain to breed vermin; and I for one would rather undergo the remote chance of a possible cold to the certain misery in ten days of vermin.

If there is one thing more than another that I would urge, it is to have the summer underclothes of cotton or linen, smooth. They are easier washed, dry quicker, and there is no cover for the vermin to harbor.

I may be thought singular in mentioning a subject usually ignored, but I know so well the universal misery caused by the pest of lice that I desire to save my comrades of the future from much that befell us ignorantly. If vermin do get into the clothes spite of precautions, the only way to kill them is to boil the clothes, and that for a cavalryman is well nigh an impossibility. The quickest and easiest thing to do is to throw them away.

So much for dress in summer campaigns. In the winter flannel is a good thing, and a long overcoat is a good thing too Our present cavalry overcoat is an excellent one, and when lined throughout with thick flannel, instead of the wretched stuff generally put in, is as good as can be worn.

A sleeping blanket, piece shelter tent, and poncho were carried by almost all our men during the war. With the horse blanket they made an excellent bed.

But the horse blanket should not be taken for the purpose. It may be wanted in a hurry.

In the summer time a single blanket is amply sufficient to keep a man warm, but in the winter the case is different. Oftentimes, then, the cold of the ground strikes through all that a man can put there. In such a case, old campaigners will make themselves warm where young ones would freeze. Clubbing together in threes and fours, they make a common bed together, over which stretches a large and comfortable shelter tent, and thus illustrate the advantages of union.

SHELTER TENTS.

The shelter tent, as taken from the French, needs a change very much. Theoretically, two men are supposed to unite to make a tent. Practically, they might as well have none at all if they obey the regulations. They secure for themselves an open shed, which is of just no use at all. If it rains, the rain beats in at one or both ends. If it doesn't rain, the shelter may be dispensed with.

The fact is, that it takes three pieces of the present shape to make a tent that will shed water, or be any good. And three men are too much for one tent. A very little reform would make the shelter tent much better, even if used according to the regulations.

Instead of a square piece of cloth, as at present, it should have at either end a triangular flap, which would button over, and so make a tent close at both ends.

The dimensions of the quadrangle should be 6 by 5 ft.; the triangular part should have a base of about 3 ft. or 40 in. With a shelter tent of this kind, no man need carry more than one piece, and so the weight would be reduced, and the tent be even better than at present.

Thus supplied, any regiments who have used it will agree that the shelter tent is a most valuable gift to the soldier, rendering him independent and comfortable at all times and places. It is infinitely better than the Eu-

ropean practice of bivouacking in the open air, or billeting in houses, and possesses none of the disadvantages of transportation incident to ordinary tents.

Shelter tents have been often issued in the United States Army, made of oiled linen or india-rubber, and in the form of ponchos, with a hole in the middle to put the head through, covered by a flap. Once or twice I have seen them put up as tents, but their more general use was to cover the person from rain, and to keep the wet of the ground in the tent from striking through the blankets at night.

These ponchos are excellent things. The proof is, that they were in universal use among our men, who were very quick to reject the bad and take the good. If made in the form suggested above, they might even supersede the shelter tent, and so reduce the weight, for some india-rubber covering is almost a necessity, and certainly a great comfort, to men campaigning.

In pitching tents for a long stay, a ditch should in all cases be cut around them, the deeper the better. It drains the ground and prevents rheumatism, the only disease that affects men campaigning.

CAMP DISEASES.

In stationary camps and barracks the plague of soldiers is chronic dysentery. Especially among green troops fresh from comfortable homes this pest rages with violence. Campaigning generally cures it. In this matter the doctor is powerless. All the efforts of medical science fail to cure chronic dysentery when it has once taken hold among new troops. Medicine is useless. Change of scene and diet will effect a cure in a week, but no doctor can help the sufferers. I may be able, however, to throw some light on this subject from my own experience. On two occasions before going into active service I was attacked with this distressing and prostrating malady. The first time it was owing simply to constant wet feet, mounting guard in wet weather,

and doing all sorts of open-air duty with dilapidated boots. A new pair, purchased, for at the time we could draw none, cured this. The second time, at Perryville, Maryland, I suffered, in common with the regiment, on account of bad water. The spread of the disease was marvellous. On this occasion it was a matter of observation to me, quite unfailing, that there was but one class of men in camp unaffected by dysentery, namely, the "old bummers," or men addicted to strong drink, openly and secretly. Whatever else ailed them, dysentery or diarrhœa never did. Acting on this hint, I determined to test it by experiment in my own person. When the regiment moved to Washington I slipped out of camp, running the guard, and deliberately went to work to get drunk, with some others. The effect was magical. Three days' pretty free drinking seemed to effect a complete change in my constitution, and I never suffered from dysentery afterwards. This is the only case in which I can conscientiously recommend the use of spirits in the Army. On every other occasion, without exception, I never saw it do anything but unmitigated harm. It transforms many a good man at other times into a fiend; and as for officers, I feel no hesitation in saying that nine-tenths of the disasters in our civil war were owing to drunkenness among officers.

In the management of winter camps our Army in the field has no reason to fear comparison with any European army. In our second year's winter-quarters on the upper Rappahannock and Rapidan, the majority of our regiments lived in a state of comfort unequalled in European services. But inasmuch as the experience of the past is useless in future, unless the officers happen to be men who engaged therein, and as the probable composition of our future cavalry will be as mixed as in the first years of the civil war, a few words may not be amiss.

In our densely wooded countries, the easiest and best way to make comfortable winter quarters is to erect log huts, roofing them with pieces of shelter tent. The walls

are chinked with clay, the chimneys thickly plastered inside with the same material, and the camp is finished. Inasmuch as our winters are fearfully muddy, the streets should be corduroyed in all cases, which renders a camp much pleasanter. If there are plenty of young pines and spruce about, a camp can be made exceedingly pretty and picturesque with rustic work of all kinds. Our infantry regiments frequently decorated their winter camps with wonderful taste in this manner, making rustic bridges over every ditch, and running neat fences around the camp.

But cavalry soldiers have little time for this. The great requisite of a cavalry winter camp, and one which cannot be too strongly insisted on and pointed out, is a good stable. In winter camps it is often too much the custom to house the men first and let the horses go uncared for. The exact reverse ought to be the case. The first care of a cavalry colonel on going into his winter quarters ought to be to see to his stables being put up and corduroyed. The men can make themselves comfortable in one night by pitching tents as in the summer, ditching carefully and corduroying their tent floors. A single day suffices for this. But every hour a cavalry horse stands in the mud, which is inseparable from winter stables, he deteriorates. The second day ought to be occupied in all cases with hauling logs to floor the stables. If the weather is fine, do it the first. The men will make themselves comfortable in any event. The poor horses cannot help themselves.

The stables should be floored the first thing, and a ditch at least three feet deep dug round it.

Dry quarters will save your horses from the scratches. In the spring they will be fat and in good condition, and able to stand a march. After flooring and draining the stables, which can be done in one or two days if the work is systematized and not left to the men, a roof should be put up, of straw if it can be got—if not, of brush, with a steep slope. It may not be quite water-tight, but it is

better than the open air. A screen of brush should be put up to the northwest to secure the horses from that cutting wind, and the stable is complete. After this you need only tell the men to make themselves comfortable, and you may be sure they will do it in short order. But if you let them put up their own quarters first, it is ten chances to one that the poor horses will have to stand out all the winter.

In our thickly wooded country there is positively no excuse whatever for a cavalry colonel letting his horses stand out in the winter. The difference between one who does and one who builds stables is best illustrated by an incident within my own knowledge. In the winter of 1864–65, the brigade of General Devin, to which I was attached, was quartered at Lovettsville near Harper's Ferry, Virginia. One of the regiments, the First New York Dragoons, was commanded by a first-class cavalry officer. Another, the Sixth New York Cavalry, possessed for its commander a recently promoted and very youthful lieutenant-colonel, as brave as a lion, but ignorant of horse-flesh beyond riding decently. The dragoon officer in one week from his arrival had stables, with good straw roofs overhead, for all his horses. The other built good quarters for his men, and left his horses almost unstabled, entirely uncovered.

The regiments were about equal in strength. In the ensuing mud campaign the dragoon horses suffered little or nothing; the Sixth New York horses went to the devil. At the battle of Five Forks in April, the Sixth New York Cavalry could only muster forty-five mounted men for action. The First New York Dragoons in the same action brought up one hundred and sixty-seven horses, exclusive of officers' chargers. Volumes could not be more instructive on the point in question.

Winter quarters shall be looked upon as the preparation places for next spring's campaign. The horses must be nursed, and fattened up, the men kept at drill to preserve their efficiency. Battalion drills once in two days,

individual instruction in fencing, and pistol shooting on the alternate days, are the best. The change keeps the men in good humor; too much battalion drill disgusts them.

In pistol-shooting, two shots a day, at a target, under the instructor's eye, are better than the whole six on one day in volley-firing. Volley-firing ought to be practised only in action, and the exactitude of its timing is a mere matter of parade, useless in action. It may do for play soldiers to amuse their admirers with. In a campaign, correct shooting beats volleys out of sight, except at very close quarters.

The horses should not be drilled more than once a week. They learn their duty much quicker than the men. In the springtime, after good dry winter quarters, every regiment ought to turn out fat, strong horses, and excellent swordsmen and pistol shots on their backs.

If every general were impressed with the idea, "In winter quarters prepare for spring," his camps would be got into order much more rapidly. That is the best time to bring in recruits. One month in winter quarters among soldiers who have seen campaigns is worth a year's drilling in barracks for a recruit; and a single campaign will have taught a green cavalry corps the necessity for drill. If the men are thoroughly impressed with this, the officers will have no trouble. If not, all the martinetry in the world only disgusts them and breeds mutiny.

MARCHES—HALTS—UNSADDLING AT NOON.

Wars are made up of campaigns and sieges. Campaigns are made up of marches and battles. Cavalry takes part in both, and excels in marches. Good cavalry can execute stupendous feats in marching if its horses are in good condition, but horses fall away from fatigue and privation much faster than men. Weight and time tell on horses. With a light weight, and at a brisk pace,

they will execute far greater distances than if heavily loaded and travelling slowly. Every moment a load remains on their backs, standing or moving, is a penance to them. The removal of weight rests them very quickly. A spare horse, that has been led the same distance as a loaded one, will seem to be perfectly fresh when mounted for a change. Good food, plenty of it, dry quarters, and room to lie down, will carry the horses of a regiment triumphantly through the hardest marches, if they are not loaded too heavily.

Keeping these landmarks in sight, the principles of managing cavalry on the march are not difficult to acquire.

In the first place, with green cavalry and experienced officers, these last should see that the saddling be careful.

If the light McClellan tree without flaps or saddle-bags, is used, and if the soldiers are restricted rigorously to a blanket and shelter tent, with one suit of linen underclothes, the weight of the packed saddle, exclusive of rations, ought not to exceed ten pounds. Three days' grain in the grain-bag makes thirty pounds more, and five days' rations ten more. Thus it will be seen that the weight of a saddle with three days' forage and rations can be reduced to fifty pounds, the ordinary weight of a dragoon saddle in Europe without a single pound of food. Counting an armed man at one hundred and fifty pounds, it will thus be quite easy to bring the total weight on the horse to two hundred pounds, a little over fourteen stone, at the commencement of the march, when the horse ought to be at his best condition. As the march progresses, the weight decreases, so that in three days nearly forty pounds has been taken from the load. The average weight of our future volunteer cavalry ought to be brought to this standard, and the maximum of efficiency will be reached. There will be room for medium-sized men of stout and active frame, and neither will the horses be overloaded, nor will the men be weakling pigmies, the extreme that some cavalry theorists

would lead us to. A man under one hundred and twenty pounds is not much use in a sabre charge, unless he is remarkably muscular for his weight. But from one hundred and thirty to one hundred and forty pounds weight has often turned out some of the most formidable athletes, and activity and skill with the sabre will counterbalance the rest. For dismounted work, the lighter and more active a man, the better.

The weight being reduced to the minimum, and the saddling attended to, the men should be kept on foot to the last minute. The practice of assembling mounted, and sitting on horseback, watching the rest of the column defile past, till it is the turn of the regiment to move, is bad. Brigade and division commanders should always keep a staff officer whose special duty it is to indicate to each regiment its place in the column. In this matter it is for the best to keep the same officer constantly detailed for this duty, and to attend to marches and camps in general. Such a practice is better than the rotation by different officers. I have seen both plans tried, and the first always worked the best.

Regimental commanders should, when waiting for the route, mass in column of squadrons, dismounted, and not move out till the leading regiment has fully passed. It is not of near the same importance in cavalry to keep a column closed up as in infantry. If fighting begins, it is quite easy to trot up to save distance, and the advantages of close intervals are neutralized by the dust at other times.

The first hour of a day's march should be taken at a brisk walk, when a halt of five minutes should be called. At such times the men should dismount in their sets of fours. This halt is very beneficial to the horses, as it gives them time to stale, and horses checked in the operation receive much injury therefrom.

At all halts throughout the day care should be taken that regiments halt together. Many colonels, from an over-eagerness to keep "closed up," waste their halting

time in closing intervals. Every halt ought to be fully enjoyed by every horse in the command. Colonels of regiments should be warned to dismount their men as soon as brigade headquarters dismount, and each regiment is to follow without waiting for orders, as it sees its leaders dismounting. The only persons allowed to remain on horseback at halts are the staff officers on duty. All others, officers and privates, should dismount. After the first halt a trot should be taken for the next half hour. During this trot regiments may be closed up, and, after the horses begin to sweat, they should be pulled up and walked. Cavalry generals should not judge of the severity of the pace by its effects on their own horses alone. Costly and well-bred animals, with very little weight on them, and relieved from duty alternately, they are no fit criterion for the horses in the column. A good general keeps his eye constantly on his troops, and concerns himself with them during the march.

A second halt should be called at midday for half an hour, when officers will be charged to see that all saddles in their troops are readjusted if any necessity exists for it. The grain bag and ration wallets should be taken off at the midday halt, as also the sabre, which is fastened to the saddle by a snap hook at other times of dismounting, particularly to fight on foot. The loosening of the girths, even taking off the saddles, is advisable at the midday halt, if the enemy are not too near, and in dusty weather a good brushing will refresh the horses wonderfully.

Half an hour's halt at noon employed in unsaddling will reanimate the horses to such an extent that when the advance is once more sounded they will seem as fresh as in the morning. The operation is quite easy with a saddle having no flaps and properly packed. A horse can be saddled in perfect order in two minutes, the packing having been done in the morning; and, if the men are accustomed to saddling and unsaddling rapidly, the

gain to the horses will be great. Many cavalry officers will stare aghast at the notion of saddling and unsaddling twice a day, but I have seen the experiment tried, and it always paid. Officers can detect by this means the first beginnings of sore backs better than at night, when every one is tired, and they can prevent the evil from spreading by dismounting the man and making him lead his horse till it is cured. If colonels and company officers are strict on this point, it will prevent a great deal of suffering to the poor animals. At these midday halts brigades are massed by regiments, in columns of squadrons, in some convenient field. Shorter halts are more conveniently made in the road in the morning. Afternoon halts are better when made in mass to avoid tedious length of columns in coming into camp in the evening.

When the distance to be gone is settled, it should be made as rapidly as possible, to give an opportunity for going into camp by daylight. This system saves both men and horses, gives plenty of light whereby to post pickets, allows of foraging parties, and is better on every account. Slow marches and late camps wear out horses more than great distances more rapidly made.

A cavalry general should consider these matters, and his men will appreciate him. A martinet who wants his men to encamp in particular manners, to suit his individual whims, soon earns their dislike.

CONTRAST OF SYSTEMS.

The first division of the cavalry corps of the Army of the Potomac was successively commanded by two officers as different in this respect as light from darkness. The first was General Buford, a model cavalry commander. Under his orders, the division pursued a course of victory united with comfort in marching, remarkable in the history of the war. Cautious and bold at the same time, he never allowed himself to be flanked in battle or delayed in marching. In all the time the division was under his orders I never remember an un-

comfortable camp; and the condition of the horses was excellent all the time.

After his death in the spring of 1864, General Torbert was put in command of the same division. It is safe to say that during the whole time he commanded us, our division never had a comfortable camp. An infantry general if anything, Torbert was utterly unfit to have control of cavalry, and soon proved it. He had a peculiar partiality for encamping his whole division in a single field if he had to hunt for one for hours. Many and many a time do I remember him keeping his whole division sitting, waiting for an hour and a half while some member of his staff was riding about the neighborhood trying to find a large field. Somehow or other, when it was found, it was always a ploughed field. Down in the dust we had to lie night after night, horses and men alike tired and disgusted. Our chief trouble was securing our horses. We had to leave them in charge of some comrade who held three or four while we started off to find wood for picket pins. If a horse was at all disposed so to do, all our picket pins would not hold him from pulling them up out of the loose soil. In the morning horse and man arose alike unrefreshed, dirty and uncomfortable, after a wretched night. The water was always distant from us, and when we went down to it we generally found the other divisions close to it and in good camps.

The result was that this whole division, which Buford left at the end of a campaign nearly four thousand strong, was dwindled to less than two thousand at the commencement of 1865, and what horses were left were in miserable condition. All which might have been saved had a cavalry general instead of a pompous infantry martinet been put over that division after John Buford's death.

The change was wonderful when General Thomas C. Devin, an old cavalry officer, took command of the same division. Although in the midst of a raid of unex-

ampled severity of marching, we had twice as much comfort as we had had in Torbert's time. Our camps, except in one or two instances quite unavoidable, were made in daylight and pitched among woods. Our pickets were secure; our horses, in spite of hard marches, kept their own, and three days' rest and food at Whitehouse Landing put them all in trim for the final campaign.

EUROPEAN CAVALRY DEFECTS.

As a general thing, our cavalry generals, and particularly regular cavalry officers, were very careful in the matter of horses, frequent dismounting, and comfortable camps. European cavalry in this respect are far behind our own. General Philip Kearny, when a subaltern officer of dragoons, was sent to Europe in 1840 to examine and report on European, particularly French, cavalry in campaign. He was fortunate enough to be attached, during an Algerian campaign, to the celebrated Chasseurs d'Afrique, at that time by far the best light cavalry in Europe. He published on his return a small pamphlet (the only copy of which now extant is in the possession of General J. Watts De Peyster, of New York city), describing his experiences. In this pamphlet he especially remarks on the carelessness of the French cavalry in this very matter of horses and on the length of time frequently allowed to elapse while the regiment stood waiting for orders to dismount.

The same care that a good infantry general shows for the comfort of his men, a cavalry general should have for his horses. A cavalry soldier will take care of himself under any circumstances, and grumble if neglected. But the poor horse cannot complain. He can only die if neglected. A cavalry general should remember this maxim, at all times and in all places: "Take care of your horses; the men will take care of themselves."

Camps should therefore be made in one of two places, deep grass fields near water, or woods. The latter are best on many accounts. The trees are handy to hitch

to. A horse can pull up a stake in a meadow if he wants to. In a wood he cannot get away from his tree. His rider has not far to go for wood for his fire, and, not being tired out and dispirited by a bad camp, has heart to attend to his horse. Bad camps and comfortless nights disgust more men with campaigning than battles, and kill more horses than marching.

The experience of the First Cavalry division of the Army of the Potomac will illustrate this. When men are tired out and disheartened by a careless commander, their horses and themselves suffer alike. Camps being good, marches brisk, and halts frequent, the first three days of a raid are pleasantly passed. Then the forage gives out, and it becomes necessary to "live on the country," unless supplies are at once forthcoming.

FORAGING PARTIES.

The question whether foraging is advisable for the subsistence of cavalry is not difficult. The answer undoubtedly is, that regular issues of grain are by far the best for the force. Foraging relaxes discipline and injures efficiency, encourages marauding, and pulls down horses by hard riding and heavy loading, to a greater degree than is compensated for by the grain procured. But still the fact remains that for cavalry to be fully used to the best advantage it must make raids; and in long raids it is very often necessary to live on the country. Cavalry that sticks close to the Army loses half its strength. It must be employed on distant expeditions to cut the enemy's lines, to be worth its cost in strategic combinations. Tactically, it should be used to turn the enemy's flanks, attack his rear, capture his batteries and wagons, and seize by swift movements the key of a position, thereafter to be stubbornly defended by dismounted men, till the infantry come up to relieve it.

For its full strategic effect cavalry is obliged to live on the country after the first three days.

Since foraging parties are necessities, then, it only re-

mains that they should be systematized so as to attain two objects with the greatest facility, viz:

1. The obtaining of the largest quantity of food and grain, to be equally distributed to the regiments.

2. The infliction of the smallest amount of suffering on the farmers and women of the country.

As foraging parties are at present constituted, they are full of defects. They are sent out too late, and the forage is not distributed properly. The march during the day may have been through a rich and fertile country, whereas in the evening the troops have possibly entered a strip of sterile ground. Common sense would dictate the gathering of forage where it is plentiful; but common sense does not always govern military commanders. Where it does, it is called genius or sound strategy, and strategy is nothing but organized common sense.

Foraging parties are generally sent out near nightfall, and often have to ride for miles before they find anything. In the case of large forces of cavalry several thousand strong, the operation is particularly difficult, as the country is very soon skinned by the swarm of hungry troopers. But the worst feature of foraging is its waste and destruction. If the forage in a country were properly collected and distributed, there would be far less suffering on all sides. As it is, the foraging parties run races for the nearest barns, pack all they can get on their horses, and the result is that one horse gormandizes where another starves, and the most rapacious marauder is best off.

Now all this might be avoided by a different system. In the first place, foraging ought not be intrusted to any and every officer. The only person properly competent to take charge of it is the quartermaster of the cavalry corps. While on a raid the whole of the quartermaster's department of a body of cavalry generally indulges in a life of ease and dignity. The gentlemen belonging to it have nothing to do, and enjoy themselves amazingly. Most of them stay behind at the depots in charge of the

wagon train, and are quite free from responsibility in the matter of food and forage.

The foraging parties are intrusted to officers in rotation from the different regiments, without experience in the issue of grain or food. This ought to be changed. The only proper people to attend to foraging parties are the officers of the Quartermaster's Department. They ought to be made to attend to it in the same manner as to regular issues, the corps quartermaster mapping out the ground for his division quartermasters, who in turn assign to each brigade its foraging ground.

All forage should be collected and issued by the brigade and regimental quartermasters proportionally and justly. This is a very difficult matter to enforce if the men carry forage on horses. They will manage to cheat their comrades out of a fair share when they rejoin the regiment. A far better way is to impress the wheeled vehicles of the country into the service and forbid the carriage of grain on horses. The quartermasters can then keep the grain much more easily under their own control, and six or seven times as much can be brought in for distribution, without any distress to the horses. For this purpose it is only necessary to supply every cavalryman in future with a stout lasso rope, to fasten to the surcingle we have urged instead of a girth. This surcingle should be made of heavy oxhide leather, with a ring and strap fastening. To the ring should be knotted the rope.

This lasso harness is in universal use on the pampas of South America, and is wonderfully adaptable. Its adoption has been urged for many years in the English service by Sir Francis Head, in different books and pamphlets, and the Russian cavalry have put it to practical use since 1814. After the battle of Montmirail in that year, General Osten Sacken succeeded in carrying off all the heavy guns in his retreat by harnessing fifty horsemen with long ropes to each piece. Although the ground was of the heaviest nature, the guns were brought off without difficulty. At the camps of in-

struction in the Russian service the use of lasso harness is constantly practised.

In our own cavalry sets, at the commencement of the war, lariat ropes were issued, with iron picket pins. These were soon disused. Their intention was to confine the horse at night, and permit him to graze while so tethered. In practice it was found that the horses were certain to get entangled in the ropes, and cut their hind pasterns very dangerously. The picket pin was far too short to be of any use, and the rope too weak. But a modification of the system might be made very useful. A lariat rope of sufficient strength, of leather if practicable, to be used to drag off guns, wagons, etc., would prove a most valuable addition to our cavalry equipment.

In the matter of foraging this is more especially the case. Grain is always collected from farmyards, and there is not a farm anywhere in which one or more carts or wagons are not to be found. If the foraging party numbered, say fifty men, eight or ten of them would be amply sufficient to drag a loaded wagon back to the regiment. A wagon can easily be loaded with five or six thousand pounds of grain, which would take, in the horseback system of transportation, from one hundred to one hundred and twenty horses to carry, at fifty pounds a horse. The rest of the party would be disposable as vedettes, scouts, and escort, if foraging in presence of the enemy. If bad mudholes intervened, any force up to fifty horses is instantly available to extricate the load of forage. No time is requisite to harness up. Each man puts the noose of his lasso around the wagon at some or any projection, and fifty horses can pull as well as one.

This system of foraging will be found particularly good in case of an attack by the enemy. A foraging party as at present constituted is almost defenceless. Every horse is so heavily loaded that he cannot gallop fast or far. The forage has to be thrown off if fighting

begins, and if the attack is repelled much time is lost in picking it up again.

By impressing carts and wagons, and using lasso or lariat ropes, this trouble is entirely avoided. Four horsemen are sufficient to drag the wagon and the rest of the men are available to protect it. The lassos can be detached instantly, or the wagons may be abandoned by all hands till the enemy is repulsed. It will not run away, and the enemy cannot carry it off unless he too carries lassos. But, if foraging parties are attacked at all, it will almost always be by guerillas, partisan troops raised in the surrounding country, and quite unprovided with regular equipments. Once beaten off, the journey can be resumed. If the worst comes to the worst, it is but an ordinary fight.

By using lassos, impressing carts, and putting all foraging parties under charge of officers of the Quartermaster's Department many abuses and dangers will be avoided. Nine foraging parties out of ten are attacked while scattered and plundering. Under the carrying system the scattering is almost unavoidable. Every man has to be at work, and vigilance is relaxed.

Under the system advocated all this is changed. Foraging will be done by brigades, not regiments. A party strong enough to protect itself from any partisan attack, say a troop from each regiment, the whole about a hundred strong, is detailed to accompany the brigade quartermaster. The officer of the day should command this escort, which should be prepared for just one thing, to fight if necessary. The quartermaster should have his clerks, orderlies, etc., detailed to act as scouts while on the march, to range ahead and ascertain the location of stores of grain, barns, farms, etc. These men should be as lightly equipped as possible to enable them to be good scouts. The present practice is that they become genteel idlers on a march.

The nearest farm being found, it should be quickly occupied, the party moving on the trot. A cordon of

pickets should be thrown around at once, and the escort halted, while the officers and one or two men enter the farm-yard. All negotiations should be conducted by the officers alone. The owner of the house should be civilly treated, and told that food and grain are all that is to be taken. He is certain to be civil. In those parts of the South in which the most intense acrimony existed during the late war, I never remember an instance where civility on our part did not bring corresponding civility from the enemy. The men should on no account be allowed to forage for themselves. They are perfectly certain to plunder, and in that case to rouse enough acrimony of feeling to render guerilla warfare a certainty.

A working party should be detailed to dismount, unarmed, to load up the wagons with whatever is available. If their arms are left them, they are sure to bully some one on the premises when out of sight of their officers. The wagons being loaded with grain (it must be remembered that ten thousand pounds will be a full day's ration for a thousand men), the question of food should always be decided in a manner as merciful to the non-combatant as possible. An ox furnishes more meat if he is driven away, and causes less exasperation of feeling, than the slaughter of a yard full of chickens. An officer should always take as little as he possibly can, consistent with feeding the command.

The advantages of foraging by brigades, and of using drag ropes to haul forage, are manifold.

First. You can carry away more forage, and distribute it with less waste, besides incurring no more danger than on picket duty.

Second. Your own discipline remains perfect, without that inevitable relaxation that comes of marauding and even of individual foraging.

Third. The country people are less exasperated.

This last advantage is very appreciable. Under irresponsible individual foraging, the poor farmer is no sooner quit of one party of the enemy than others come gallop-

ing up yelling like fiends. The poor man is kept in a continual state of anxiety and alarm, and his helpless family of women are liable to constant insult. It is these insults of marauders more than the losses that raise the spirit of guerilla warfare in a country—a spirit of all others the most annoying in its results to a regular army. A corps of cavalry of three divisions, each of three brigades, under the brigade system of foraging, will only have to find nine well-to-do farmers within a radius of five miles or a circuit of thirty. Each farmer will only receive one visit, and if he has not enough he will be very glad to tell you the name of his next neighbor, so as to equalize the burden and save himself. Very few farmers cannot furnish fifty sacks of some sort of grain or its equivalent in hay, and a hundred sacks will feed a brigade for a whole day. It is true that you borrow the man's wagon; but as it will be left in camp, he can easily get it next day, when the column moves on. Nine farmers out of ten will be glad to purchase exemption from marauders at such a price.

War is a cruel thing at its best, and in a cavalry raid, living off the country, the barbarities committed are often inconceivable. The exasperation of feeling caused by them is sure to produce the guerilla spirit, or bushwhackers. The excesses committed by our own forces in the Shenandoah valley and other places brought on this phase of war in Virginia. The consequences were so grave, that to save his army from constant raids, General Sheridan was compelled to lay waste the whole valley, burning every house and barn that would afford cover to guerillas. The measure, founded on grim necessity, was worthy of Attila. A different system at the commencement of the war, severer discipline and less robbing, would have saved us from guerillas altogether. The advantages of severe discipline are manifold. The country people dread a well-disciplined army less, the enemy dread it more. An army of marauders is lax

in discipline, and must go down before equal bravery and better discipline in its enemy's troops.

Brigade foraging with drag ropes, as I have recommended, removes all excuse for straggling on the march, keeps the command uniformly supplied, and excites the minimum of ill-feeling in the country. On a raid it will be found the best way in any country whatever, whether poor or rich. If the party has to visit several places in a poor country, each wagon should be sent back, as loaded, with five or six men to guard and drag it. Care must be taken not to weaken the party too much in this way, however. In a rich country a single large farm will often supply a brigade.

Safeguards should in all cases be left at houses that have supplied the troops, to protect them from future pillage. In a friendly country, where foraging becomes necessary, receipts should be given by the quartermasters for feed and provisions. If the Commissary Department is separated from the Quartermaster's Department (which it certainly ought not to be), the brigade and regimental commissaries must attend to the provision part of the foraging, remembering always the economy of flour or meal, as mixed with meat in the invaluable sausage ration.

But as soon as a raid is over, and the cavalry has rejoined the Army, supplies should be regularly issued. No system of foraging, however good, can supply an army for any length of time. The system of making war support war is well enough with an active general who can end a campaign in six weeks. If long sieges and tedious operations are indulged in, a base and supplies are absolutely necessary. Cavalry is the only arm of the service that can be said to be comparatively independent in this respect. As far as food is concerned, a well-equipped and well-mounted body of cavalry thirty thousand strong, commanded by a general like Sheridan, could march from one end of the United States to the other, and if placed in Europe could do as they

pleased, in summer, from Paris to Moscow. But even they are forced to have a depot somewhere to supply them with ammunition. And the rest of the army is still more dependent on bases and communications.

BAGGAGE AND TRAINS.

In the matter of baggage and trains there is much room for improvement in our cavalry service. At present there is no distinction between a cavalry and an infantry train. One moves as slowly as the other. There are just three things which are loaded in cavalry trains, viz., food, ammunition, and baggage. The provision and forage part of the train should not be taken on raids. Great bulk and weight are necessary, and such cannot be moved rapidly.

Ammunition must be carried. So must a small quantity of baggage, but the less of this the better.

The problem becomes, then, to carry the ammunition and baggage in the smallest space and safest and most expeditious manner. Ammunition has very frequently been carried on pack mules. The plan has the advantage of requiring no wheeled vehicles, and so of being independent of bad roads. But the disadvantages of the plan outweigh its conveniences. It takes an immense number of animals, which have to be fed, and makes a long and tedious train. Since cavalry must always be accompanied by artillery, wherever a gun can go a wagon should follow. One ammunition wagon, with six mules, will carry as much as twenty-four pack mules, besides distressing the animals less. At all halts, a mule in harness rests; a pack mule has no rest till going into camp.

Wagons, then, even for raids, if of any length, being settled on, the question arises, how small can a train be made, to carry enough ammunition for a cavalry corps?

Taking a corps of cavalry at its full strength, viz., three divisions, each of three brigades of four regiments, of which the average regimental strength is about four

hundred present for duty, the total service strength of such a corps is about fourteen thousand men. In a severe battle, the men being under proper control of their officers, and the latter not ammunition wasters, the consumption ought never to reach over forty rounds per man. This ratio can be adhered to with advantage, and leave the force more formidable in reality than the prodigals. Three full battles ought be allowed for on a raid, the ammunition to be carried in wagons, the men retaining eighty rounds besides. You can thus fight five pitched battles, if necessary, before returning to the army. At 120 rounds per man, it will thus be necessary to carry about 1,700,000 rounds of ammunition in the wagons, or about seventeen wagon loads, the full corps ammunition train for a raid. The artillery should have a single ammunition wagon for each battery, at the rate of a battery to a brigade, making nine more, or twenty-six in all.

Ammunition being provided for, the baggage remains to be considered. It is a very difficult matter to deal with this, unless corps and division headquarters set the example of economy. In several raids and expeditions I have seen attempts made to cut down the baggage, beginning with regiments. Staff officers from division headquarters would come down the line of march, and pitch on to the pack mules of company officers, turning them loose, throwing off the packs, and in some instances confiscating the mules for division headquarters. Now, as long as corps and division headquarters are incumbered with a host of useless hangers on, as at present, so long will the regimental baggage be bulky.

In army administration, as in civil life, law is not always nor often justice. In too many instances it is rank injustice. If a general wishes his baggage train reduced, he must set the example himself. If he carries a dozen tents, and office furniture for a host of useless aides-de-camp, which takes six wagons for corps headquarters, four apiece for division and two for each brig-

ade, he will have a total of thirty-six wagons of lumber, which will not do the force he commands any good whatever. The evil will be sure to spread down, and the baggage train become a terrible nuisance, every regiment having its own tail, till the whole of the pack train extends for a mile and a half.

To check this state of things, the most stringent orders are issued. Staff officers are sent to enforce the orders, and to reduce the regimental trains to the minimum. Heartburnings and animosities enough arise out of this baggage business to breed a mutiny, almost. If all staff officers were gentlemen, such a duty, even in that case, would be very disagreeable to perform to both parties. But since a very small proportion of our staff officers during the late war could be said to belong to that category, it generally happened that they made their orders a pretext for making themselves as oppressive and insolent as possible to regimental officers.

The whole secret of the cumbrous baggage trains of modern armies lies in one word, luxury. The private soldier in the ranks during the war, I can testify from experience, lived in perfect comfort. Without piling a load on his horse, he managed to find a good bed, a good fire, a good supper, and a feed for his animal. An officer, if allowed by custom, might do the same. But officers are not allowed by custom to do anything for themselves. They must wait for the pack train, when their servants come up to make them comfortable. To men who have risen from the ranks the contrast is unpleasant. The higher the grade of the officer, the greater his luxury and imagined wants. A general thinks it absolutely necessary to his comfort to have two walled tents, an iron bedstead, mattresses, sheets, blankets, a silver dinner service, and an army of retainers. Every little staff officer likewise finds it necessary to have a tent and at least two servants, one for his horses, one for himself.

The adjutant, inspector, quartermaster, commissary, surgeon, and ordnance officer are all too proud to work

They have clerks detailed to do their work, while they strut about in useless idleness, imagining that they are conferring a great benefit on the service by sometimes signing their names. Some of these gentlemen may resent the description, but I have seen the inside of too many headquarters not to be confident of its general truth. A good staff officer in the field is invaluable, and principally because the article is so scarce.

Now all the excesses of a baggage train may be avoided if the general begins the reform. If he will confine himself to a single A tent during campaigns, and compel the different staff departments to do their necessary desk work all together in a single hospital tent, the same officers may well sleep in the office at nights. There are just six necessary officers on a staff, the adjutant, quartermaster, commissary, surgeon, ordnance officer, and inspector. In most cases the aides-de-camp are mere honorary gentlemen, appointed from favoritism of some kind, and most profoundly in their own way and every one else's, as low as brigade headquarters at all events. Two hospital tents ought to contain without difficulty the whole of a corps staff, with the general's A tent opening into them. The headquarters would not be near as imposing as they are at present, but the staff would be more under the general's eye, and work harder. If the detailing of clerks was abolished, the work would be better done. A staff position might not be a remarkably snug berth, as at present, but men who went on the staff would do their duty twice as well and be twice as efficient. If a single wagon contained the corps headquarters baggage, which it might easily do, matters would be much simplified. The staff and general should mess together. In the clubbing principle lies the solution of the question of the greatest comfort to all, with the smallest weight.

THE MESSING SYSTEM.

Two hospital tents and an A tent, a single mess chest

and a single cook, would reduce headquarters baggage marvellously. Division are almost as heavy as corps staffs, but the personal and material of brigade headquarters may be much diminished. The adjutant, quartermaster, and commissary are about the only necessities here. Inspector-general and medical director of a division are at present nearly sinecure officers. Give them brigade work to do, and they will accomplish more and become really useful; at present they only consolidate reports and add up columns of figures. Too many papers are the grand cause of our bulky baggage train. They serve as the excuse for a vast deal of other lumber. But even having reports as they are, by adopting the clubbing system at all headquarters the baggage will be lessened to one-fifth of its present amount.

Four wagons, under the system advocated, will carry the headquarters baggage of corps and three division headquarters. Nine two-wheeled carts under the same system will be ample for brigade headquarters. The train will be reduced, and comfort, not luxury, will be augmented. At present it frequently takes an hour after the men are all comfortable in camp before the headquarters train comes up. During this time the general and staff are often occupied in cursing the teamsters as they stand about in the rain and mud, unable to obtain any sort of comfort. In the regiments the delay of officers to get their baggage is often still longer. Some of them find that the pack train has been invaded by staff officers during the day and all their store of grain and provisions gone. Now, under the messing system, the baggage may be much reduced. Two hospital tents and an A tent would hold the colonel and all the officers of a regiment. The adjutant's and quartermaster's desks can be left with the forage train.

A single two-wheeled cart could thus carry all the baggage of a regiment, including a proper mess kit. As every officer has a second horse, he should be furnished with a packsaddle to carry grain for both. At present every

regiment on service has a train of forty or fifty mules, besides led horses, and the total train of a cavalry corps is nearly as numerous as the fighting horses. By the mess system a single cart supersedes the pack mules, and every officer should carry his food and clothing on his own horse. The only relief an officer's horse requires is the removal of the thirty pounds of grain. This off, the horse will be quite light enough to do all his extra work over that of the men's animals.

An officer's horse should not be loaded down like a private's; far from it. Its rider has more running about to do the higher in rank he goes. But three days' grain for two horses, although a great addition to a man's weight, is a trifle by itself. If arranged in two bags of the kind before described, it can be unloaded and loaded at all halts, to save the horses. Spare horses in this way become the least possible incumbrance and accomplish the maximum of good.

Under the messing system the retinue of servants is greatly diminished along with the train. A cook and two waiters are ample for a regimental mess. All the enlisted men detailed from the ranks in such a case are the grooms, one for each officer. Less than this cannot be allowed. An officer cannot groom two horses and attend to company duty besides; and it is better to allow the grooms to volunteer from the ranks, as they are more amenable to discipline than civilians.

In the matter of eating and drinking, the mess system affords far more comfort than the individual system. A good cook can be hired at very small expense to each officer, when all club together; provisions will cost much less; last and best, the mess system encourages *esprit de corps* and cordiality of feeling among officers, and a regiment is apt to work better under it.

In time of peace, and in garrison, the mess system is far from desirable. In the British army, where it prevails exclusively, it gives rise to much extravagance, and ruins many a poor man by the emulation to excel

his richer comrades. But in war time, and with the mess baggage restricted to a single cart, extravagance is easily checked. The caterer should in all cases be the regimental commissary. His duties are a mere sinecure at most times, and this service would make him a useful man. Rotation of special duties is always unadvisable. The business of caterer requires experience, and who is better fitted for it than the commissary?

Now let us see the difference between a corps train on a long raid under the two plans:

TRAIN ON MESS SYSTEM.

Ammunition train	17 wagons.
Corps and division headquarters	4 "
	21 wagons.
Brigade headquarters (nine brigades)	9 carts.
Regimental headquarters (thirty-six regiments)	36 "
	45 carts.

TRAIN ON OLD SYSTEM.

Ammunition	17 wagons.
Corps headquarters	4 "
Three division headquarters, at two wagons	6 "
Nine brigade headquarters, at one wagon	9 "
	36 wagons.
Regiments, about forty pack mules each, all told thirty-six regiments	1,440 mules.

The difference in length is something remarkable when the two trains are compared. A six-mule wagon occupies about sixty feet in column, allowing for intervals. A train on the mess system, allowing twenty-five feet each for the carts, a liberal allowance, would measure in single file seven hundred and ninety-five yards, not quite half a mile. On the present system the wagons alone measure seven hundred and twenty yards, the mules in column of fours, at five yards apiece, nineteen hundred yards more; a total of two thousand six hundred and twenty yards, or about a mile and a half.

In moving single brigades the difference is still more striking, five carts being all the baggage train, instead of the present string of sore-backed mules. In comfort of lodging the difference is equally marked. Two hospital tents will hold all the officers of a regiment with perfect

ease, as they already hold in hospital twice as many wounded men in comfort and coolness.

The ample hospital tent, perfectly water-proof, is far better to sleep in than a shelter tent, which is all that our officers carried on active service. Thus it will be seen that by a wise use of the clubbing principle, for officers, the baggage train of an army can be reduced to less than one third its present length, with an increase in solid comfort in three important points, viz.: 1st. Quickness of camping; 2d. A dry tent; 3d. Good food. The loss is in individual freedom, a restraint that will be found very useful among young officers, as tending to the suppression of ungentlemanly and boyish tricks, by the tacit veto of polite society.

The colonel's tent should be alone, however. He must not mix too freely with his officers, except at mess. Familiarity breeds contempt. The other field officers I have not provided for, simply because, in any common-sense improvement of the cavalry, it will be expedient to abolish the lieutenant-colonel and two of the majors. In the three-battalion system adopted during the war, the three majors were very good theoretically; practically, they were dummies in most cases.

OFFICERS AND BREVETS—HORSE ARTILLERY—MITRAILLEUSES.

A colonel, a major, a staff of adjutant, quartermaster, commissary, ordnance officer, surgeon, and veterinary surgeon, with a captain for each company, is the best complement of officers a volunteer cavalry regiment can have. In such a regiment the non-commissioned officers would be trusted with many responsibilities. I venture to say that they would prove worthy of them. Good sergeants and corporals are the life-blood of an army. Their promotions for merit should be by brevet, so that they could enjoy the opportunity of association with their superior officers before exercising actual command. By the system of brevets you place a man on probation in each new rank, and are not saddled with a drunken

officer, who may have been an excellent sergeant, but turns out to be unfit for elevation. I have seen too many instances of this not to feel anxious for a check on the practice in future. By the brevet system, a colonel can always remit a man to sergeant's duty. He draws the pay of his brevet rank only while doing the duty of that rank. Still, in such cases, the option of resignation should be given. A degraded officer will never make a good sergeant again, unless he does his duty willingly.

But one branch of the strength of a cavalry corps remains to be noticed on the march, after which the questions of outpost and advance duty and the purely strategic part of cavalry service will terminate the disquisition. This branch is horse artillery; and its proper management ought to be part of every cavalry officer's education.

During the war of the Rebellion nearly all the batteries of horse artillery serving with our volunteer cavalry belonged to the regular service. They were splendid batteries, well horsed and equipped, and officered mostly with West Pointers. The guns were either three-inch rifles or "light twelve-pounders" of brass (a cross between the howitzer and long twelve or Napoleon gun). But in the matter of horse artillery, a great economy of men and horses might be practised, and that with advantage to the whole corps, if the system of lasso draught, before mentioned, were more generally applied.

Contrary to the general opinion, the use of artillery in the field is by no means the mystery that many artillery officers love to call it, to enhance their own importance. That there is much abstruse science required for the full making up of an accomplished artillery officer, we do not pretend to deny. But a great deal of this abstruse science is thrown away in the field. A table of ranges at different degrees of elevation, to be committed to memory, and a faculty of judging distance correctly, are the great essentials for a chief of piece. I have often

and often seen old artillery sergeants beat their elegantly educated West Point officers all to nothing at a difficult shot.

The theoretical knowledge necessary to the posting a battery properly, and the management of the guns in action, do not require, after all said, the expensive array of officers and the amount of luxury now accorded to a battery of horse artillery. A single captain and a dozen, sergeants from the old Regular Army, with the guns and caissons, ought to be enough for a cavalry battery. The men of the regiments can be taught to work a gun in three days. The service is perfectly simple. Artillery officers drill at it for a long time in order to get the men to do certain things in a certain way, but the root of all this is found in the little phrase "fuss and feathers." Our cavalry of the future ought to be drilled for work, not for show. A battery of six guns, four being rifles, two "light twelves," ought to accompany every brigade. The regiments should take turns to drag it with their lassos, the advance regiment of the day having that honor. Any force of horses necessary could be put on at once, in muddy roads and over soft fields, and the guns would never be an incumbrance.

The advantages of horsing a battery from the regiments, and of drilling all the men of every regiment to the "school of the piece," are manifold. The men soon get very proud of their pieces, and will stick to them through thick and thin. The artillery sergeants would command the pieces and caissons, and the artillery captain the battery. Equal precision of fire would be attained, with greater economy of men and horses. One hundred and twenty of the latter will be saved in each brigade, with the pay of gunners and drivers. Under the lasso draught system, gunners, drivers, and supports are all one. The covering squadron of cavalry furnishes all three. The saving in baggage is also immense. As for the travelling forge and repairs, etc., this is easily

provided for. The sergeants of caissons should be artificers as well as gunners.

It may be objected that there is no provision in this plan for the replacement of the chiefs of pieces who act as pointers, if killed. I have only to say that the casualties in a battery of flying artillery are so rare, that long before a chief of piece gets disabled he will have had time to train a dozen successers in every regiment, among the sergeants. In the course of three years' active campaigning in Virginia, I cannot recall an instance of a man being killed in our brigade battery under fire, and I only remember one instance in which a limber was smashed by a round shot. Batteries serving with infantry have hard times in action. Their service is very frequently the most dangerous on a field of battle, and their losses are out of all proportion to that of the other arms. But flying artillery batteries have the easiest time of any body of men in the army, apart from the quartermaster's department people.

Under the lasso draught system, not only do the men become fond and proud of their pieces, but in case of capturing an adverse battery their practice becomes excessively valuable. Dropping the nooses of their lassos over the pintle-bolts of the trails, they can whisk off the captured guns in a moment, before the supports have time to retake them, even if the limbers have been galloped off by the enemy.

The use of the lasso is easily learned by men who know how to ride. The perfection of skill attained by gauchos and Mexican vaqueros need not be hoped for. But any man can learn how to throw a lasso if he is properly taught, and the art may often prove very valuable, especially in capturing prisoners, stopping escaping artillery teams, forming bridges, etc. (In the brief system of tactics annexed to this treatise will be found instructions for lasso casting.)

The use of the lasso, in conjunction with the ox-hide surcingle as a harness, if introduced in full in our cav-

alry, will add vastly to its future value. Even green cavalry can learn its use, and very soon become exceedingly expert. It is a peculiarly American invention, and as such is well suited to our cavalry of the future. In performing the service of artillery drivers and gunners, it will enable cavalry to act as well as artillerymen. It will prove an immense economy in expense, saving the cost of all the horses and four-fifths of the men of all the flying batteries in the service, without reducing their precision of fire one iota. If it is a waste of labor to use men to do horses' work, it is equally waste to maintain a corps of men to do nothing but sponge and ram and carry cartridges. Cavalrymen can learn the duties with ease, and leave the artillery sergeants to their true duties, as pointers and marksmen; the captain to his, the theoretical direction of the whole battery.

Cavalry officers, under this system, from emulation and curiosity, would be inspired to study up artillery subjects, and by so doing the tone of the volunteer service would very probably be much improved, for, as before noticed, "learning softens the manners." Besides which, the study of artillery leads to fortification and strategy, studies of all others valuable to cavalry officers, especially the latter. In fact a cavalry raid is a masterpiece of strategy, and when a whole army executes the same movement, it is so recognized.

Before leaving the subject of flying artillery, it seems that some notice ought to be taken of the great artillery improvement of the decade, the mitrailleuse or battery gun. A modification of this instrument was tested, or rather tried superficially, in our own war, in McClellan's peninsular campaign. It was then pronounced a failure. But during the Franco-Prussian war of 1870, the mitrailleuse has done terrible work, when properly used. Tried at long ranges, it has proved to be inaccurate, and not to be relied on to the extent of rifled shell guns. But at close quarters, against columns of troops, for the same purposes as grape and canister, it is far superior to a

brass gun. If the composition of our future flying batteries were ordered at five rifled guns and one mitrailleuse to every brigade of cavalry, I am inclined to think that the improvement over the old batteries would be marked. The Gatling gun or American mitrailleuse is a magnificent weapon of this kind, for simplicity and accuracy. A section of these to each brigade, with a single battery of eight thirty-pound Parrot guns, would be a great improvement on the present system. The heavy guns are able to demolish any field fortifications; the mitrailleuses will finish up any troops opposed to them far better than brass guns with canister. But in such case the mitrailleuse should only be used for its true purpose, the repulsion of attacks at close quarters In the frequent instances wherein the Prussians captured these guns in 1870, it was invariably from the same fault—waste of ammunition at long shots, leaving the gun dumb and powerless at the decisive moment. Properly used as a reserve, the mitrailleuse will be an invaluable weapon. Out of ammunition, men are not fit to use it any more than its grandfather and original, the Colt's revolver.

In the second part of this treatise will be found the drill of the mitrailleuse, or rather of its American prototype, the Gatling battery gun.

STRATEGY—SCOUTS.

We have now passed in review the purely tactical and logistic elements of cavalry in campaign, its arms, horses, food, forage, clothing, marches, baggage, and artillery. It remains to treat of the strategical part of cavalry duty, the system of pickets and scouts, whereby it finds out the enemy's movements while hiding its own. We will commence with scouts.

Perhaps there is no part of warfare so difficult to master, so important in results if mastered, so fruitful of disasters if uncomprehended, as the science of scouting. Able, faithful, and trustworthy scouts are very rare.

The combination of qualities that go to make a good scout is not often met with. Nine out of ten of the headquarter scouts in our service during the war were simply reckless scoundrels, who brought in but little valuable information, and stole horses from the farmers to sell for a consideration. There were exceptions, but this was the rule. A more useless body of men, take them all in all, was seldom met with. The rebel scouts, on the other hand, especially at the commencement of the war, furnished the fullest information to their chiefs. One great cause of this was that the rebel cavalry scouts were very often officers of intelligence and address, who could take hints quickly, adapt themselves to circumstances with readiness, and who had their hearts in the business. In the last words lies the whole secret of the scouting system. Some men are natural detectives. Such men are fitted for the position of scout because they love the excitement of finding out. Other men have suffered deadly injury from the enemy, and long to avenge themselves. If such men have lived in the country to be scouted in and know it well, they are the men to employ, if intelligent. But one quick-witted, well-educated officer, well mounted and lavishly supplied with fresh horses, if needed, will bring in more reliable intelligence than a whole swarm of detailed horse-thieves out of the ranks. It is far from good policy to think every rascal a smart man. An honest man whose word can be relied on will not furnish false information.

Scouts will do well to go in pairs. Two pairs of eyes are better than one, and two heads are proverbially better than a single brain. One can often take back intelligence while the other goes further at greater risk; so that even if the latter is captured, the general gets the news.

Scouts should be mounted in the best possible manner. They should be first-class pistol-shots, and carry from two to four revolvers in belt and saddle holsters. They should carry no sabre on any account, as its jingle would

betray them, and they ought to be light men themselves. Many a time they'll have to ride for their lives, and an extra pound or two may cause their loss. They should have all their grain and clothing carried in headquarter wagons to lighten them. Generally, they manage to live off the country without any difficulty, and supply themselves with horses in the same way, as before mentioned.

The system is an excellent one if none but reliable officers are appointed. The mistake lies in supposing every smart horse-thief to be a good scout. A perfectly brave man he must be, not afraid to hover round the enemy's flanks, and find out his position in full. Such a man is valuable. A dozen such are invaluable, and worth a horse every day if they need it, which they oftentimes will.

With the spy system a cavalry treatise has nothing to do. Spies are expensive luxuries, and belong more to the province of the chief of the whole army than to that of the cavalry corps general. But the system of headquarter scouts, under proper discipline, furnishes one of the best lessons of the decade for the future. Headquarter scouts form an extreme advance of bold, wary men, on swift horses, who should not fear to venture miles away in front of their own advance guard, to gain any information of the enemy's movements. Men detailed in rotation for this duty fail in skill and experience. They must be kept on the same duty constantly, to acquire the skill. Every day that passes, every lucky escape, adds to their boldness in finding out the numbers and position of the enemy, and boldness and swift riding are two valuable qualities in a scout. If they are reliable in their information, it will be found much more serviceable than that of spies, on account of its frequency, and the short time elapsing between seeing and reporting.

Scouts should not be dressed in the enemy's uniform. It tends to render the business treacherous and to de-

grade its character in the eyes of the men in the column, besides deterring many men from volunteering as scouts who would make the best. Our own headquarter scouts, when Sheridan commanded the cavalry corps, were very much disliked by the men on account of their assuming the rebel uniform. I have known them even to be fired at deliberately by our own men, under pretence of mistaking them for enemies. Dressed in our own uniform, or something easily recognizable as such, they lose the sneaking spy character, and become twice as useful in reality. Their uniform should be something that resembles that of the enemy only at a little distance, and prevents the wearer being shot at by your own men.

Under the "enemy's uniform" system, the men in the column frequently fail to distinguish friend from foe, and I have known more than one instance of rebel officers coming inside of our lines and making due inspection without danger in full uniform. They were taken for headquarter scouts.

But, under proper discipline, as before noticed, a body of bold quick-witted men, with sharp eyes, accustomed to judge of the strength of bodies of men at a glance, are very valuable. They should be prepared to shoot at an instant's notice; to pick up the enemy's stragglers and question them; to ride all round his columns and wagon train; to make off across country at a speed that defies pursuit, if detected; to turn and fight if not followed by more than four man. Quick decisive work can be made with revolvers, if a man is cool, determined, and a sure shot. Such a man has more than even chances with four ordinary cavalry soldiers pursuing him. If he should be a first-class swordsman, it may even be advisable for him to wear a sabre. But in that case the scabbard must be of simple leather, or the jingling will betray him. For night work, and often for day work, scouts should be provided with some sort of pads to deaden the sound of their horses' feet if necessity requires it. Such pads are easily made, and can be ad-

justed on occasion. They must be frequently renewed, as they will quickly wear out, and to be of any good they must be very thick and soft. A scout should also be provided with a pair of hobbles, to enable him to leave his horse motionless if necessary, while he reconnoitres on foot. A single strap, with two loops near the end, is the best thing for this purpose. The loops, which slip up and down, are passed around the two front pasterns, the long end of the strap is tied over the hock of one hind leg. A horse thus secured will stand like a statue for hours, and is released in twenty seconds. The strap can be used as an ordinary halter strap, if hitching places are near; but the hobbling plan makes a scout independent in a meadow behind a hill, whence he might often make valuable observations. Scouts should be furnished with powerful telescopes, to enable them to count distant forces with accuracy and in safety. A wary scout, at a prudent distance, with a good glass, can often gather more valuable information than a more reckless one who ventures in closer. The former sees, himself unseen.

If men can be found well acquainted with the country to be operated in, so much the better scouts. But if this is impossible, every scout should carry a map, on a large scale, to be filled in with details from his observations. Under this system, it will be seen, a scout becomes an important adjunct of the topographical engineers, and may often be of great service. The scale maps furnished them should be drawn by the engineer officers of the corps, and the scouts will very soon learn their use, and become emulous of supplying the best details for their skeleton maps. True, an engineer officer would be needed on the corps staff, but this is only as it should be; and if topographical skill were more generally utilized by cavalry officers, the gain would be immense to the whole Army. A very little experience, under the guidance of a good practical topographical engineer, would render the majority of men of intelligence and

fair education capable of filling in the details of a map enlarged to say two inches to the mile, with a fair degree of accuracy, increasing every day. Distances from place to place should be timed by the watch and pace very carefully noted at every change thereof on a note book. Courses by the pocket compass, carefully laid down, will help the engineer officer and his assistants amazingly. If every scout carried a note book in which he was taught to record his route, in the form of an itinerary, maps might be made with but little difficulty that would prove of great service in operations over the same ground. The general and engineer officer, by taking a little trouble to train scouts in this matter during winter quarters and in long rests over well-known ground, can very soon judge of their capacity and correct their inaccuracies, besides teaching them how to do the greatest amount of work in the shortest time. No scout need then come in empty-handed. Even if he hsa not seen the enemy, he has mapped the country, and topographical information is always valuable.

In the second part will be found brief directions for an itinerary over a supposititious country and rules for estimating distances by the size of objects, etc.

Scouts should be paid highly and kept on probation. If they are detailed from the ranks, they must be very sharply watched, to prevent their becoming marauders. Scouts have such fine opportunities for this practice that the only real safeguard against it is the selection of honest men for the duty.

ADVANCED PARTIES—ORDERS OF MARCH.

Scouts should travel several miles ahead of their commands, and in some cases a full day's march. But inside of their line of march a second species of guard is necessary, styled advanced parties, in front of the advanced guard proper. The essentials of a good advance are celerity of transmitting intelligence and the covering of as long a stretch of ground ahead as may be. As

in the case of scouts, so with the advance. Its duties are special and require special training to insure perfection. It is thus better on every account to have a permanent detail for the duty, taken equally from the regiments of a brigade, instead of the constant rotation now practised.

But brigades should take their turns at the duty by all means. They are very frequently detached from the corps, and should always be able to act offensively, independent of the rest of the corps. Every regiment should have its share in the formation of the advance, and its operations should resemble those of a moving picket guard, only far more sweeping and extended in reach.

The advance of a corps need not be more numerous than that of a brigade. Its essentials are the same. In front of everything an officer, or brevet on probation, with a sergeant and two men, all carrying their firearms ready for instant use. A chain of vedettes, a hundred yards apart for a mile back, making eighteen men. The main body of the advance then follows, about thirty strong, with a second chain of vedettes for a second mile, to the advanced guard proper, composed of the leading brigade with its battery.

By passing back signals the approach of the enemy can be transmitted along this line for two miles in less than two minutes, giving the main body time to prepare.

When anything suspicious appears, the officer in front should examine it with his glass. If it is only some scout of the enemy, he ought to be able with his three men to shoot or capture him. If a small party of the enemy is suddenly met, a bold front and vigorous charge will often impose on them and make them believe a heavy force is coming. A loud yell caught up by the vedettes will very often intimidate and deceive the enemy, even if in some force. The object of an advance is to find out the enemy and keep him from finding out anything about your own force; and therefore men of boldness, dash, and plenty of brass are the best for the

permanent advance. The same spirits that are turbulent and troublesome in a column are the very ones to be useful in an advance.

The road being protected by the extreme advance, side roads must be supplied with their guards from the chain of vedettes. At every side road encountered a man should leave the chain, the first vedette taking a trot and riding out for about a quarter of a mile, or nearer if a sufficient view is commanded from such point to prevent surprise. The next man in the chain moves up, and the gap is filled by each successively, a man from the main advance supplying one more vedette. When the whole of the advance has passed, this man is relieved from the advanced guard proper and then takes the post of the last vedette in the train.

Under this system, first introduced by General Morgan, C. S. A., a great deal of country is covered with very little labor, two miles ahead of the advanced guard. The employment of flankers and skirmishers, unless the enemy is known to be near, hardly pays for the consumption of horseflesh occasioned by constant riding over broken ground.

Forces likely to be dangerous to a cavalry corps must move on roads, and if two miles of road are occupied by a chain of vigilant vedettes, whose whole business is to look sharp, an enemy will find it impossible to approach very near the column without being seen. Under the chain system the least amount of galloping has to be done by each member of the advance. A hundred yards by each vedette at every cross road completes the amount. The scouts, who ride in light saddles, are better able to act as flankers.

When the enemy makes his appearance in force not to be denied, the advance must halt and form up in skirmish line to detain him as long as possible. In such case the whole of the main advance, vedettes and all, must gallop to the front and spread out into the fields to check the enemy, yelling like devils, to make him be-

lieve them three times as numerous. This is the only time when rapid firing is advisable, as a great show with slender materials has to be made. Inside of twenty minutes relief is sure to come, and then the forward movement must be made in skirmish line with supports, in the regular style.

In countries infested with guerillas or bushwackers flankers will have to be used, as the annoyance caused by such men to a column is often serious. In such a country a chain of vedettes, at right angles to the line of march, about two hundred feet apart, to the distance of a mile on either flank, will scour the country pretty effectually. In woody country these flankers must be much nearer, and at such times a competent staff officer should take charge of each flank, with two or three orderlies to attend him.

In the case of men detailed for flanking duty, permission should be given them to deposit their grain-sacks and food-wallets with the caissons of the brigade battery as they go to the front. The work is so severe on the horses that they should be favored in every possible manner, and the men execute the duty infinitely better on horses not fagged out with heavy loads. When once a battle begins, and the general line is formed, no such favor can be shown, from the number of combatants involved; but in flanking duty, which often lasts a whole day, and does not occupy more than fifty men at the most liberal computation, the relief can be afforded with much advantage.

Under the system of advanced parties proposed, the rest of a cavalry column can move on independently, and without any formal advanced guard. The only precaution necessary will be that the first regiment of each brigade should be followed by the brigade battery. If the ground is firm as in summer time, the guns and train should march in the road by sections, while a column of fours of the regiments moves along the fields on each side. This plan, when practised, reduces the length of a

column of fourteen thousand cavalry with all their baggage to about five miles, allowing every horse a space of five yards in column. This length even will appall a civilian; but to those who have seen the column of a single brigade stretch for over a mile, with its pack train, the reduction will be apparent. In ordinary column of fours, a brigade with a battery and pack train, will occupy a length of twenty-two hundred yards; and a corps of nine such brigades, with ammunition and headquarter trains, over thirteen miles. If the fields are not so soft as to be trodden into mud-holes, the march of a cavalry column on a raid should always be arranged in this manner. A general has his forces well in hand, every part of the column is instantly defensible, the men dismounting in fours if attacked suddenly, and the guns and train being quite safe behind a curtain of troops. But in winter campaigns or in early spring, when the fields are soft, such movements are impossible; and unless necessity is absolute, campaigning is much better left alone at such times. At least I cannot recall an instance during the war in which a "mud raid" proved itself worthy in its results of the terrible expenditure of horses occasioned by it. Only in the last death-throes of the Confederacy, when the overwhelming pressure of circumstances paralyzed their army, was a "mud raid" successful, and even then the same objects would have been accomplished with less sacrifice had the move been deferred till the ground was dryer.

The advantages of shortening columns to the greatest extent are best realized when coming into action. A general with a column only five miles in length has the advantage of over one hour over him with a column of thirteen miles. The other cannot bring up half his men to the front, when the "short column general" has put his whole force into line of battle. The preponderance of force will be sufficient at the decisive moment to insure a success by defeating the enemy in detail. But in such cases the general of the corps must keep well to the

front, and have first-class scouts, to be able to take the due advantage of time by knowing exactly where the enemy are.

REAR GUARDS—RAIDS—PIONEERS.

In retreats, when forced back, the order of battle with covering skirmish lines, dismounted and mounted, alternating to check the pursuit, has been described in the first chapter. It is simply a retrograde battle, with every point stubbornly disputed.

In a retreat in face of the enemy, who merely follows in a corps of observation, the regular advanced party is transferred to the rear and exercises the same duties on inverse principles. They retire slowly, halting to fight dismounted if pressed, taking every advantage of ground, and ought to be supported by the mounted skirmish line and a battery. By holding on in this manner they can often detain the enemy half a day, while the rest of the corps goes on at its leisure. A single brigade in this manner can easily cover a whole corps; but its commander must keep his eyes well open, and the division general ought to be with him with plenty of scouts. In returning from a successful raid this is particularly necessary, and on such occasions it will very often be found requisite to guard both front and rear with the brigade advanced parties, as that is the time usually selected by the enemy to intercept the raiders with heavy forces of infantry.

As raiding is the operation by which cavalry can be made most strategically important during a campaign, so it is also the most difficult operation to conduct with undeviating success, and by which to effect results commensurate in importance with the losses in horseflesh from forced marches, and in men and animals in the attempt to rejoin the army.

The close of a raid is its point of greatest danger. By celerity and secrecy the general may manage to escape the enemy and make his march outwardly. He may even cut his railroad, burn the depot he is after, and play the

devil with the enemy's communications and supplies but if he cannot rejoin the army in safety, all his work may be thrown away. If he has to cut his way through, the losses in men and horses will more than counterbalance the gains of the raid.

On his return then, it behooves a cavalry general to be even more wary and watchful than when he set out on his raid. His scouts must be on the alert, night and day, to find out where the enemy is and what forces are on the road to intercept him. He must keep his command well in hand, his columns as short and broad as the ground will admit, feeling his way with the far-reaching advance scouts and flankers. He should endeavor to accumulate three days' grain from his foraging parties to last his men through the final three days, when foraging will be no longer prudent or even possible. When the position of the enemy is ascertained, if his force is too heavy to be cut to pieces, he must be deceived as to the direction of the march; and during the night the other flank must be passed.

It is impossible to give wooden rules for the guidance of a raiding general. Briefly, he must be ever vigilant and fertile in stratagems, always ready to back out of a scrape without loss, and as ready to fight his way in if he sees a good chance. General Sheridan was, of all others, the most entirely successful raider of the civil war. He did immense damage to the enemy on every occasion, and always managed to get back in perfect safety. His losses in horseflesh from hard marching were exceedingly heavy, but the desolate nature of the country through which he raided was principally to blame for this. Skinned and scraped by the passage of two armies, hither and thither, for three long years, the land could not furnish a single ear of corn in many places. In those parts of Virginia hitherto untouched we fared sumptuously.

As a contrast in results to this model general's raids, the expeditions of Stoneman in 1863 and 1864, of Kil-

patrick in December, 1863, of Wilson and Kautz on the left flank of Grant's army in 1864, are fruitful of lessons. Stoneman's first raid before Chancellorsville killed several hundred horses, cost an immense sum in lost equipments, and accomplished almost nothing. Transferred to the Southwest with Sherman, he was compelled to surrender with his whole force while on another raid. Kilpatrick's Richmond raid cost us the loss of Colonel Dahlgren and the annihilation of his column, and accomplished as little as Stoneman's. Wilson and Kautz were so roughly handled on their return to the army, after a raid otherwise successful, that they lost all their guns, and their commands only escaped by scattering and coming in individually, as luck brought them, while more than half were captured. The difference between the commanders in question and Sheridan lay in one word, vigilance. Sheridan was never surprised when present with his army. He always knew where the enemy was, and preferred to surprise him. The other generals sufferred all their losses from want of vigilance.

A cavalry general on a raid must be always awake, or at least he must take as little sleep as nature will permit. He must surround himself with pickets that stretch for miles, and keep his corps encamped in as small a space as possible. Woods are best for this purpose, on many accounts. They hide the number of troops, furnish fuel for fires, and hitching posts for horses. They are easily defensible in case of a surprise or attack, and by pushing out the pickets to the edge of the open ground the grand requirements of a perfect camp ground are fulfilled, viz., wood, water, and security. Water is almost invariably to be found in or near the woods, from their very nature. Security against attack is gained by felling a few trees on the flanks of the camp to entangle an enemy. Breastworks can be improvised in half an hour among woods. In the summer, by taking the precaution to encamp early, and put out fires after dark, a

whole corps of cavalry may be buried in the woods without giving a sign of its presence.

On raids, as at all other times, a pioneer corps will be found very essential to the proper protection of a cavalry corps. Whether for taking down fences, throwing up breastworks, or making bridges, their services are invaluable. The practice during the war was to detail two men from each company in a regiment, each carrying an axe or spade, making twenty-four pioneers to each regiment, with a sergeant to command them. The cavalry corps would thus have a total of four hundred and sixty-eight pioneers, an ample force if used together to do anything requisite in mending roads, removing obstacles, or making bridges If these pioneers follow brigade headquarters habitually, they will be found much more available than if left with their regiments. At night their only duties should be to pitch the headquarter and regimental mess-tents, and they should be excused from picket duty.

With regard to axes for the men to use in camping, etc., I am convinced that their issue and carriage would pay in the end. If the squad system is adopted, of sections of four to eat and sleep together, the system being enforced, number four of each set can carry an axe in a sling. It ought to be clearly understood that such axe belongs to the squad, and is to be carried in turn by each member. This allowance will be found to be ample, and will save much distress when circumstances compel the encampment in the open fields. One axe is worth a dozen hatchets to cut picket pins and firewood, and it is also enough for a squad of four comrades accustomed to mess together. Its weight in a sling is not much, and in dismounted fighting the horse-holder carries it. In the late war axes were looked upon as personal property in many cases, and much selfishness was displayed in their use. In the squad system this is unknown. One man will hold the horses, one cut the pins and fire-wood, another carry them down to the horses,

while the fourth makes the fire. The advantages of co-operation and division of labor are as apparent in the case of men as of officers. The disadvantages of solitary churlishness are as evident.

OUTPOSTS AND PICKET DUTY.

After the march comes the camp, after the camp the picket. So many volumes, good, bad, and indifferent, have been written on the subject of picket duty, that the man who attempts more on the subject runs the risk of repetition. Every modern cavalry book contains the same stereotyped directions for "grand guards, pickets, and vedettes," with the same plate, representing a village, a wood, and a stream, with a chain of pickets around it. I do not propose to enter into any description which will require an elaborate map to display the author's (or his draughtsman's) skill. A description which is not clear without constant turning to a map is faulty, besides being useless to the majority of officers.

The most difficult circumstances under which a picket can be posted are those of a raid, especially towards the end of a successful one when exasperated enemies are nearing you hourly. The same pickets that, when with the main army, are only necessary in front of the corps, whose flanks are protected by other troops, must now be thrust out on all sides.

A corps of three divisions, under these circumstances, should be encamped in an equilateral triangle, and the reserve of the pickets stationed to cover the salient. Each brigade in turn should picket the front of its own division, and in the brigade alternate regiments should be sent on picket bodily. This plan works better than making small details from every regiment nightly. A regiment sent on picket bodily, works together better than a number of independent details. Three full regiments ought to picket the whole three fronts of a corps without any difficulty in a radius of a mile from the camp, a distance ample for safety.

At a distance of a hundred feet apart, a fair aver

age distance, fifty men will picket a mile, and three hundred the whole circle of six miles. Three reliefs are necessary for the pickets, and a reserve of three hundred men will be left. I am counting a regiment at four hundred men, a very fair average campaigning strength.

During the civil war there was much slackness on both sides in the matter of picket duty. As a general rule, especially when the army lay for any length of time in the same place, the pickets were too weak and too close in. I have known several disasters caused by the latter fault, notably so the surprise at Cedar Creek. If the pickets of the army had been twice as strong, and a mile out instead of a hundred yards, that surprise need never have taken place.

On another occasion, I remember the pickets of the Sixth New York Cavalry being driven in by a handful of guerillas, and the camp ridden into, before any defence could be organized. The men were luckily old soldiers, and turned out of their huts (it was winter) in their shirts, driving off the enemy with their carbines, but the disaster need never have happened with proper pickets.

The directions in the outpost duty manuals, and other books of the same sort, recommend the placing of vedettes in pairs, and frequent patrols. I do not believe that during the whole civil war the vedettes were ever so posted, and the patrolling was by no means what it should have been. Weakness of numbers was the chief cause of the first neglect, condition of horses of the second. On both sides of the contest there was too much negligence, and the infantry pickets were notoriously slack.

After the surprise of Cedar Creek the pickets of Sheridan's army were pushed out much further, and with advantage, but the duty was still very carelessly performed. I remember once myself getting outside the line without knowing it, and being stopped by an officer on the road in charge of the picket post, who refused to let me through, as my pass had not been countersigned at division headquarters. Now it was in looking for these

very division headquarters that I had lost my way in the snow and got outside the line. The sapient officer simply turned me back. If he had suspected me to be a spy, he should have detained me. Instead of this, he simply told me I must go back. I did so, walked round a wood, and flanked the post about a quarter of a mile further up. The enemy's scouts had just as little difficulty in penetrating and going back and forth, I make no doubt.

Two grand principles should be kept in sight to regulate the due performance of picket duty:

I. An enemy in force must follow the roads.

II. Scouts and spies go across country.

These two dangers have to be met properly by a good picket system.

In the first place, all the roads within a radius of a mile, leading to the camp, must be occupied by the full force of the picket reserves or regiments. The outside vedettes should be placed a good mile from the camp, and barricades erected, as an invariable rule, across all the roads a quarter of a mile back; and about midway between every two roads is the proper place for the picket posts. A barricade should also invariably be put up to shelter their front, the vedettes being warned of the proper path to take if driven to its shelter. A quarter of a mile further back again, and midway between its picket posts, lies the regiment or picket reserve, also fortified. The camp itself should be surrounded with a cordon of sentries, a hundred yards out, dismounted. With such a system of picket posts and reserves a corps may sleep in peace in any country, secure of plenty of time to form. A full mile of increasing resistance has to be passed over by an enemy before the camp can be reached. The strength of the reserve is a half mile from camp.

Between the roads the cordon of vedettes is drawn, a hundred feet apart, and the outposts are established, as economically as possible consistent with safety.

Now let us examine the way in which the duty should be done. In the ordinary picket systems we find too much adherence to red tape and routine. As our fathers did so do we, without applying common sense and experience to improve on the model according to ground. For instance, we find it laid down as a rule, in most books on the subject, that cavalry picket posts should mount and remain mounted during the whole time that each relief is being put on. The amount of standing still under heavy loads, inflicted on the poor horses under this rule, is frightful to think of. No wonder that picket duty soon wears out cavalry horses. The practice of keeping all vedettes mounted, without exception, is also a matter of red tape and tradition. Officers are afraid to allow any other plan in the face of precedent.

Now the real fact is, that at night a man on foot is much more likely to be vigilant and quick of hearing than the same man mounted. If every cavalry vedette at night would hobble his horse, as we have recommended for scouts, and patrol his own beat in a fashion similar to a sentry, the picket line would be much harder to pass at night. The duties of a chain of vedettes at night are to stop scouts, spies, and guerillas, and shoot them if possible. A man stealing about in the dark cannot be picked off so readily as a statuesque mounted vedette, sitting still for a target. The horse will take his rest well enough if the man is off his back; and his grain-bag had better be left at the post, if it is full and heavy, as also the ration wallet, till the last relief goes on in the morning.

As for keeping the picket post mounted and standing still, they are ten times as useful on foot in most cases. Standing to horse is infinitely preferable to mounting, on occasion of relieving vedettes. A horse is too valuable an animal to be used as a bench to put weights on. Every moment he is not in motion he should be rested, and standing still with a man on his back is as bad as marching for a horse.

The vedette in the fields, etc., should have his horse near him, hobbled or hitched as the ground warrants, but capable in either case of being mounted instantly. He should patrol slowly and cautiously to his next neighbor, avoiding noise. The dull monotonous tread of an infantry sentinel is as far from the step of a dismounted cavalry vedette as can be. He should rather imitate the Indian, wary and noiseless, seeing and unseen.

The vedettes in the roads, behind their barriers, should be perfectly still. They can see a long distance ahead, and the instant anything comes in sight they should mount. Forces coming on roads are apt to be strong, and our vedettes must be prepared to fight or fly. The doubling of road vedettes, but of no others, is very advisable. Two men behind a good barricade can keep a number at bay in the dark. In case anything doubtful appears, one of them can either steal forward on foot to examine, or go back for a patrol.

In the case of field and wood vedettes, patrolling on foot answers most of the purposes of doubled vedettes, with half the number of men.

In the choice of vedette posts a wooden routine is not advisable. Straight lines, ignoring the conformation of the country, when woods and fences dictate a wavy line, are very poor policy. If the country is diversified with open fields and little patches of wood, vedettes should always leave their horses on the inside of the wood patches, while they themselves push through to the outer edge from whence they command a view of the fields. If a fence occurs, or a stone wall, vedettes should steal along behind it, keeping a barrier between them and the enemy. Impassable obstacles, such as deep rivers, must be watched. If carelessly picketed, they are liable to be crossed in boats.

The picket posts should never unsaddle. One relief should also keep on the grain bags and ration wallets.

The one that has last come off may remove these, except during the morning watch.

Surprises in force are always made in the morning watch; all pickets at that time should be fully saddled and packed and ready for duty. In the first watches, and up to three in the morning, the relief on duty and the one just come off can take off their grain and rations, which can be replaced in fifty seconds if they are laid in order behind the horses. In case of a night attack, the relief next on duty should mount at once, and be ready to succor the vedettes, to enable them to get their forage and rations; but as night attacks on cavalry pickets properly posted are impossibilities in point of success, the vedettes need not hurry back too soon. Night alarms generally arise from guerilla incursions, or excitable imaginations of vedettes. If the latter are posted so as to have a good view, their imaginations will not mislead them; but if you put a cavalry vedette out in the middle of a field with a wood in his front, as I have seen scores of times, you offer a premium to such a man's imagination to play him tricks and excite false alarms.

The officer in charge of a picket post must be a man of experience. To put a young one in charge is to invite a surprise. Young officers should be put on as supernumeraries for some time before trusting them with a picket post under their orders.

All patrols should be sent from the picket reserve. The sergeant or corporal of the relief will do the patrolling from the picket posts, without needing a man with him. But strong patrols, consisting of an officer, a sergeant, and four or six men, will be sent out every hour from the picket reserve down the roads. These patrols should go out at least a quarter of a mile beyond the vedettes, unless they run into the enemy. After three o'clock they should be particularly watchful; and at that time the whole picket reserve should pack their saddles. The early part of the night they only keep sad-

dled, patrols and all leaving grain and rations in the bivouac.

The picket reserve should be strongly posted, and command the probable avenue of approach for the enemy. A barricade or hasty breastwork should be thrown up in its front, by which a stubborn defence can be maintained.

In the matter of driving in pickets, these rules may with advantage be repeated. Small forces come by the fields, large ones by the roads. Night attacks are mere annoyances. Severe attacks come on about daybreak. These rules will hold good in almost every case, and especially in that of well-extended pickets. Rapid dashes can only be made down roads. Advances of large forces over broken ground are necessarily slow. To drive in a picket, rapidity is absolutely necessary. By barricading the roads much time will be gained, and a second line of defence on the level of the picket posts can be fallen back on.

At the first sign of a morning attack, the whole of the picket posts should mount, and gallop up to the line of vedettes, deploying as skirmishers. The picket reserves should also mount, and gallop up to thicken the line further. If the ground is thickly wooded in patches, a better defence can be made by dismounting, and pushing through to the other skirt of the woods, on foot. If forced to retire, the next line of defence must be held as obstinately as possible; and as the successive reinforcements arrive and the distance to the main body decreases, the resistance will be more and more stubborn.

I do not believe it possible for pickets with a mile between them and the camp to be driven in with enough rapidity to cause a surprise. Under proper management, with dismounted vedettes patrolling to each other in wary silence, patrols striking out on all the roads, and barricades erected with the same invariable prudence that made the Romans fortify their camps every night, a cordon of pickets would be practically unassailable ex-

cept by heavy force. That the horses would be less broken down needs no demonstration. The weariness suffered by cavalry horses standing mounted for two hours at a stretch, still further aggravated by the practice of mounting the whole picket post every time a relief goes on, brings many of them to the condemned corral. Picket duty is known as "very severe on horses," especially in winter. It need not be so if the vedettes dismount whenever they are at rest.

The system of camp guards, dismounted, inside the line of picket reserves, is very important. The length of the line is so small, that one fifth of the number of men on picket suffice to guard it; and if a scout of the enemy should succeed in running the picket line, he will fail to run the closer line of sentries. It was this inside line of guards that saved the Sixth New York Cavalry from a much worse surprise on the occasion before mentioned. The inside sentry gave the alarm and afforded the camp nearly three minutes to turn out from the time the first dash was made.

Patrols on the roads and frequent visits of the corporal of the relief are also very necessary, and to be insisted upon. They keep the vedettes up to their work, prevent them from being lonely, and encourages them generally. A vedette on post has much to discourage him, especially in bad weather, and needs all the support that can be given to him. The frequent visits induce a feeling of companionship in the minds of men very sensitive to moral influence. Sleepy heads are kept awake better, also, by frequent patrols.

The patrols which go outside the lines must have some signal arranged with the road vedettes to indicate their return, to avoid useless delay. Watchwords and countersigns are good in their way, but they are no real safeguard; a countersign has many a time been overheard by concealed enemies, who have availed themselves of its ægis to enter the lines.

In this matter, as in others, common sense must rule

instead of precedent. The problem is, to enable a vedette to know friends from enemies. When a patrol passes out he should count it carefully, and notice the color of its horses. The officer of the patrol should speak to him to let him know his voice. Some inaudible signal, such as making peculiar signs with one or both arms, or sabre, or hat, is preferable to countersigns if the night is not too dark. As patrols should never return except by the roads, and as road vedettes are doubled, one of them can go forward to examine any party approaching if it claims to be a patrol. But if a vedette knows perfectly well who is coming, he should not be encouraged to a stolid rule of action, which embarrasses friends and does not keep out enemies. Such a thing as the commanding general getting outside the lines, and not permitted to pass in by a stupid sentry who knew him perfectly well all the time, ought not to happen under the reign of common sense. Such instances have happened, and they savor of the martinet days of Frederick the Great, which ought now to be forgotten. If a vedette is really in doubt, he should fire off one barrel of his revolver, which will bring up the corporal. In these days of repeating arms the thing is easy enough. If he really suspects the stranger, he should detain him at all hazards, covering him with his carbine. The system of turning a man back has nothing to recommend it. Suspicious persons should be detained. Your own people, if you know them, ought to go through, countersign or no countersign.

A shot should always call out the corporal or sergeant of the relief. There is no necessity to turn out the whole post mounted. If the enemy is coming in force, he is sure to make the other vedettes fire, and as the corporal gallops off you will soon hear more noise. But if two or more shots are heard, the whole post should go to the front at once to support the line, for even a small squad of guerillas may do much damage. In the matter of rousing a picket post everything must be left to an offi-

cer's discretion, but he must be careful not to hesitate beyond two shots coming together.

Wanton vedettes, from a pure spirit of mischief, will sometimes fire to alarm a camp when they have seen nothing. Such men must be watched by the corporals, and if the offence can be proved on them, which is a very difficult matter, they ought to be made to run the gauntlet of the whole regiment with switches, as in the Russian service. The offence deserves a penalty as severe as sleeping on picket, only short of death.

FOREST PICKETING—CROSSING RIVERS.

I have thus far treated of pickets on ordinary ground interspersed with small patches of woods and open fields. This is the general character of the more thickly settled States. In Canada, however, as in the Southern States, there exist very extensive woods full of tangled underbrush, in which oftentimes pickets have to be thrown out.

In this species of country, more than any other, surprises must be guarded against. Mounted vedettes are almost useless in such places. An enemy can approach perfectly unseen to within a hundred yards of the picket line, and the sense of hearing is all that can be relied on. A wooden-headed martinet putting out mounted vedettes in such a place invites their capture and his own surprise. Dismounted men are the only means of successfully picketing such a place. A regiment sent on picket in a dense forest must be treated as a dismounted skirmish line. Its horses must be all left with the picket reserve, who will see them fed by the stable guard. Around this picket reserve a strong breastwork must be thrown, a thing easily done in our dense pine woods.

Every picket post must be fortified in the same way, and its front obstructed by fallen trees, etc. The line of vedettes must be also thoroughly protected. A very few trees felled in a line, the underbrush cut down behind them and thrown in front, will delay an approaching

enemy. A path should be cut behind each vedette by which he can retreat on the picket post if attacked; and a second path should run along the picket line behind the obstacles, to be patrolled on.

Treated in this way, a camp in a forest can be made perfectly impregnable in a very short time. The approaches are very easily obstructed, and that done, a quarter of a mile is a sufficient distance for the line of vedettes in woods. An enemy can be detained in forests for at least six times as long as in open ground. But the approaches must be obstructed in order to make such a line safe.

To throw out a perfect picket line in a dense forest requires daylight. The whole regiment must be dismounted in the place chosen for the picket reserve. Pioneers and all must be sent forward to the vedette line and put to felling trees. As a hundred and twelve axes are available, this line ought to be cleared in short order, the trees felled in a straight line about fifty feet apart or less if necessary, the underbrush behind thrown over, and the paths cut. Between the paths the underbrush should be left and further entangled by the cuttings from those paths.

The vedette line once established, the individual posts are left to fortify themselves, while the rest go back to the reserve.

The principles of forest picketing are modifications of ordinary picketing. The roads must be patrolled as far as possible. As so many men are not needed for vedettes, more are left for patrols. Forest patrols should go out a mile at least. To prevent surprise and capture by lurking parties of the enemy, they should be about twenty strong and mounted. At every hundred yards a man should be left to watch the woods. By this means a chain is formed sufficient to warn the patrol of any parties threatening its rear or flank. No one can stir in a wood without being heard. If the road vedette hears a movement, he should ride into the bushes to examine

into the cause, finger on trigger. A shot will be the signal for the patrol to gallop back, strengthening as it goes.

Patrols adopting this precaution are safe from surprise. The long line of vedettes becomes a living telegraph, as in the case of the "advance." Silent signals can be arranged, in case the night is not too dark, and intelligence communicated from front to rear with marvellous rapidity.

An enemy in a forest must come by the roads. To advance and attack, he will spread out on either flank, but will not deploy outside of a mile off. The morning patrols are certain to run into him if he is coming.

Reserves and posts ought to be midway between roads, and their form of breastwork ought to be a redan or lunette—in other words, wedge-shaped, the sides fronting the roads diagonally. This will be perpendicular to the direction of the probable attack from a skirmish line enfilading the road.

Paths from the picket posts to the reserves must be cut, to enable the former to fall back. They should be zigzag, to perplex the enemy and detain him under fire.

Thus we have noticed the most important modification of American outpost duty, forest picketing; and the only thing left to notice in raiding is the way to cross rivers.

Any cavalry general worthy of the name ought to be able to cross without pontoons any river in America not navigable for ships. A river like the Hudson or James, the Ohio or Mississippi, may be allowed to stop him, if he cannot seize boats enough; but ordinary rivers not over a hundred yards broad ought to be crossed without difficulty, without pontoons. A pontoon train is a luxury, very pleasant to have, but a fearful nuisance to guard.

All horses can swim. They ought to be sent across in that way. The men who can swim should go with them. The only difficulty is to keep ammunition dry. This can be arranged very easily in this manner: All army

wagons and carts ought to be capable of being turned into boats at a moment's notice. The common Conestoga wagon looks just like a pontoon. Make it water-tight and high-sided, and the whole difficulty is solved. On arriving at a river, the wagons are unloaded, lifted off the axles, and there is a large boat in each. Baggage wagons, if large and capacious, and lightly loaded, as they should be, will float without unloading. Ammunition boxes can be unloaded in three minutes by a string of men from the ammunition train.

The soldiers fasten enough lassos together to make a line across the stream. A volunteer swims across with his horse, unarmed, or with a sabre only, and covered by the rest if the enemy are on the other bank. A flying bridge is instantly formed with an empty wagon, in which five or six men cross, armed, and leading their horses, pulled by the first man who crossed. The instant they are across they mount and attack the enemy. A second line should be sent across in the boat by which they came, and a second flying bridge crosses while the first is coming back. In this way enough men can be supplied, covered by artillery and sharpshooters, to force a river, in presence of any enemy not too formidable in numbers.

If the crossing is unopposed, it can be made much faster. Fifty or a hundred men can cross at a time by throwing arms and ammunition into the boat while they are towed alongside. The ammunition chests go over a quarter of a load at a time. The artillery caissons are unloaded and their contents ferried over in like manner. The guns and caissons are dragged across the bottom of the river. Their prolonges are fastened together and made into a long line to reach to the other side of the river. This is manned by a sufficient number of men, and the whole, gun, limber, and all, whisked over the bottom in a minute. The prolonges of a battery are ample to cross any ordinary river in this manner, and cavalry guns, caissons, and baggage may be all crossing together.

By means of a little practice, a whole corps of cavalry could be taken across any ordinary stream, not fordable in this manner in one hour.

The wagons and carts could be unloaded in ten minutes by men used to the operation. In ten minutes more, or twenty at most, twenty-one wagon boats would be disposable for flying bridges. Towed by these, a thousand men could cross at a time, and take only three minutes to cross. Thus in sixty minutes from reaching the stream, ten thousand men would be across. The loaded carts light enough to float are to be towed across at the same time, and the artillery can be dragged over without waiting. As the men do not get into the boats, but tow outside, the small weight of their arms will not prevent a load of ammunition from going over every trip. All working together, and the wagons made fit for boats, the whole corps can cross in a dozen trips.

I have not mentioned the carts. They might be used, but are almost too small to carry much. They, as well as the wagons, might be made capable of floating an immense weight without unloading, if they were furnished with large bags of vulcanized india-rubber, to be fastened around their bodies, and inflated on occasion. Emigrant wagons crossing rivers are often floated over by lashing empty barrels round them in the same manner. But such bags would require greater care than most teamsters would afford them, to keep them from holes, and wagon boats are indestructible. The inconveniences of the plan are only found in loading wagons. The absence of a movable tailboard compels some considerable lifting in loading them; otherwise the plan is a good one.

In very broad rivers the wagon and cart bodies may be used as pontoons. Twenty-one wagons and forty-five carts will make a pontoon bridge five hundred and twenty-eight feet long. But the delay would be greater than under the flying bridge plan, from the necessity of unloading everything. After guns and caissons have

been dragged through, the guns must of course be sponged and dried, as also the caisson chests.

To cross small deep rivers, trees should be cut down and made into bridges. A whole corps of cavalry with plenty of axes and lasso harness can bring down enough trees to make a good-sized bridge in half an hour; and if wood is plentiful enough, this is the quickest and safest manner in which a heavy column can cross a river. But there must be an axe in every squad for this; and there ought to be.

I have now run rapidly over the principal lessons of the decade in regard to the proper employment of cavalry. In Europe, the military writers appear to be totally ignorant of all but the past. If we had been as much fettered by tradition as they, our cavalry would be as useless as theirs. In all the European wars since 1855 the cavalry has done absolutely nothing. In the Crimea it was sacrificed; in 1859 it stood a silent spectator of Solferino and Magenta; in 1866 it accomplished almost nothing, except in a few sabre and lance charges in small numbers. On our side of the Atlantic it speedily became the right hand of victory.

I have traced some of the causes and systems by which it became so valuable, avoiding book-learning, and quoting from experience in the field wherever available. In this first part I have given reasons and suggestions only. In the second I propose to submit a simple system of tactics and orders, dogmatically taught of necessity, the reasons for which will be found in this part.

EXTRACTS FROM THE SECOND PART, ENTITLED

LESSONS OF THE DECADE APPLIED.

SABRE EXERCISE AND TOURNAMENTS.

The sabre will be the ordinary Ames blade, of the present United States pattern, to be issued as sharp as a razor from the factory. It will be worn in a scabbard of simple black or brown leather, kept soft and supple and without any wooden lining. Near the mouth of the scabbard will be an outside sheath, to hold a small, flat tablet of soapstone with a wooden handle to act as a whetstone. The sabre will always be drawn slowly and individually before exercise, and returned in the same way after it. It will be worn in a frog at the waist-belt, like the infantry sword, and not slung. In dismounted fighting it will be taken out of this frog and left on the saddle in the same bucket provided for the carbine when mounted. At every halt after a long march, and every evening and morning, the sabre will be drawn and tested. If not sharp enough to cut hairs from the head or shave some off the bare arm, it must be carefully whetted until it will do so.

Dismounted sentries shall never mount guard with sabres drawn. Either they shall carry carbines, leaving the sabre in quarters, or they shall take it from the frog and carry it sheathed, and at a port (*vide post*). The point, whether bare or sheathed, shall never be allowed to rest on the ground.

Inspections of sabres and pistols shall be held daily, to keep both weapons in condition.

Officers should constantly impress on their commands the value of sharp sabres which will gash, even in the hands of a child, if kept like razors, and cut men in half at the waist in the hands of soldiers of ordinary strength.

The men being perfect in drill, the instructor commands as follows, explaining and illustrating as he goes on: "Attention to sabre exercise! *From the right*—COUNT FOURS! *Fours*—RIGHT!" These movements are executed as in dismounted skirmish drill. The instructor then passes along the columns and designates the alternate sections as "right" and "left."

Returning to his post, he commands, "*Right and left*—FILE!" The alternate sections will file off in opposite directions, the instructor counting paces aloud. At five paces the last man of each file halts; at ten paces the next; at fifteen the next; at twenty the file-leader, when the instructor commands, "HALT! FRONT!" when

the odd sections pass to the front. The men are now stationed in a body, the breadth of the squad in line, and about forty paces deep, all under the instructor's eye, and having ample room to use their weapons.

The instructor now commands "GUARD!" One motion. At the word "Guard" carry the right foot two feet from the left, heels on a line, toes straight to the front, feet parallel. Bring up the left hand opposite the belt plate, and about six inches therefrom (bridle hand). Grasp the sabre fully with the right hand, and drop the flat of the blade on the left forearm, edge to the front.

NOMENCLATURE OF EXERCISE.

The hand can assume just two positions in fencing, carte and tierce. All others are modifications of these two. When the back of the hand is turned to the right or down, leaving the nails up or to the left, the hand is said to be in carte. When the nails are down or to the right, the back of the hand up or to the left, the hand is in tierce.

There are four kinds of sword movements, to be taught in the following order: 1, points; 2, cuts; 3, guards; 4, parries or moulinets. Each of these movements can be given on either side, and in carte or tierce. The last three may combine both positions in two motions.

The instructor explains as above, and then commands, first illustrating the order:

Carte—POINT!—Three motions. 1st. At the word "Point," place the hand against the breast, the sabre held horizontally, the edge up, the hand in carte. 2d. Thrust out to the end of the arm and draw back the elbow instantly to first position. 3d. Come back to guard.

(N. B. This point against right or right rear, not much use on the left. Best on right front. To be directed on all these points, the instructor explaining it as a fine but not a strong thrust.)

Tierce—POINT.—Three motions. 1st. At the command "Point," carry the sabre, horizontally and edge upwards, opposite the right ear, the hand in tierce. 2d. Thrust out to the end of the arm and instantly draw back the elbow to first position. 3d. Come back to guard.

(N. B. The strongest point. Available all round the body. The men are cautioned to draw back the elbow on making the point, to avoid being disarmed in action.)

Carte and tierce cut and—POINT.—Five motions. 1st. At the word "Point," extend the arm to the right rear as high as the head, hand in carte, the flat of the blade

resting on right shoulder, edge to the right. 2d. Cut horizontally from rear to front. At the end of the cut turn the wrist in tierce, and bring the back of the blade to the left side of the neck. 3d. Cut horizontally back again. At the end of the cut bring the sabre back to tierce point, by drawing back the elbow. 4th. Make tierce point. 5th. Come back to guard.

Tierce and carte cut and—POINT.—Five motions. 1st. At the word "Point," carry the back of the blade to the left side of the neck, the hand in tierce. 2d. Cut, and come to carte on right shoulder. 3d. Execute carte cut and draw back the elbow to carte point. 4th. Make carte point. 5th. Come back to guard.

(N. B. The men must be cautioned not to let the hand turn so as to cut with the flat of the blade, a common fault. The first of these cuts is the most useful, as it ends in the strongest of points, a tierce. The second is used if you can gain your adversary's left rear, as his defence is powerless against carte points at that time.)

Circle—DEFEND.—Three motions. 1st. At the word "Defend," carry the hand to the right front in carte, the sabre perpendicular, edge right front. Carry the guard along the whole right to the rear, turning the body to face right rear. 2d. Turn the wrist, throw the hand above the head, and drop the point to the left rear, the hand in tierce, the sabre protecting the left rear. Carry the guard along the whole left down to the left leg, and rise again to cover the horse's head, ending by clearing it and guarding the right leg. 3d. Come back to guard.

(N. B. This guard is impregnable all round against cuts. It must be carefully taught.)

Carte—PARRY.—Four motions. 1st. At the word "Parry," raise the hand in carte, the body being turned toward the right, the elbow drawn back, the blade perpendicular, edge to the rear. 2d. Describe a sharp quick circle from rear to front downwards, the back of the blade leading, returning to first position, and turn the body to the left. 3d. Repeat the parry on the left side. 4th. Come back to guard.

Tierce—PARRY.—Four motions. 1st. At the word "Parry," raise the hand in tierce, being faced to the left, elbow drawn back, the back of the blade leading. 2d. Describe a quick circle downwards, returning to first position, and turn the body to the right. 3d. Execute the same parry on the right. 4th. Return to guard.

(N. B. Used against points of all kinds.)

The drill being over, the instructor commands: "*Form*—RANKS." At the word "Ranks," the file-leaders

on the instructor's side stand fast. All others march up alongside, obliquing to the left or right to do so. No. 1 shall in all cases be right of fours in line, and this will regulate the direction of the oblique. As the men come up, they will sheathe their sabres immediately, carefully avoiding dimming the edge. They will then be taken back and dismissed.

SUPPLEMENT TO SABRE EXERCISE.

TOURNAMENTS.—As soon as the men have learned the cuts and guards with the sabre, tournaments should be instituted in troops and regiments as follows:

Each troop shall be divided into two parties, mounted and drawn up in line opposite each other, at fifty paces distant, counted in fours. The captain stations himself midway between the lines and commands:

No. 1 right engage—Gallop—MARCH.—No. 1 of each party, beginning at the right, starts at a canter, and engages his opponent on the right side, using an old blunted sabre, two of which are kept in each troop. Two helmets and a pair of steel gauntlets are also issued to protect the heads and arms of the combatants from accident. The captain watches them closely and counts the cuts and points as hereafter described.

After two minutes he commands, "*Break off*—MARCH;" when the men break off and return to their troop, each removing the helmet and gauntlet, to hand to the next man along with the practice sabre.

The captain orders, "NEXT," and so on to the end of the troop. The engagement shall be varied to left alternately, and cuts counted as follows, to include dexterous horsemanship:

Gaining the enemy's left rear, cut on head, thrust in body, each counts ten. Cut on the arm counts five; cut on the leg counts two.

A cut on the horse's head loses 20 for the man who receives it, but counts nothing for the one who gives it.

The first sergeant attends the captain with a list, and marks the counts as the captain calls them to each man's name. If a man complains of his horse being refractory, and demands a change at the close of the lesson on account of his opponent's counting 10 for a "left rear" he may be allowed to change horses and run one course; but if he fails to gain his adversary's left rear, he shall lose 20 marks. At the end of every six months, or at the opening of every campaign, silver medals shall be awarded to the best swordsman in each

troop. For regimental tournaments only the silver medallists are competent. Their contests are limited to ten minutes, and a gold medal shall be given to the winner of the tournament, who shall be required to oppose with success six adversaries successively.

Any man not a medallist may enter on declaring his willingness to engage two medallists at once, but on no other terms.

All regimental tournaments will take place in a hollow square of the whole regiment.

LASSO DRILL—THE MITRILLEUSE.

The lasso will be forty feet long and fastened to a ring on the off side of the surcingle, the coils hung on the same side of the saddle within reach of the hand. To use it the instructor commands, after proper explanation and illustration, *Open*—LASSOS. Take up the lasso with both hands. Open the noose and gather up several coils in each hand. The noose is held as follows: After opening to about six feet across, take one side of the noose on the palm of the right hand, with the line of the lasso itself also laid thereon, the eye or loop of the lasso in front of the hand about six inches therefrom. Close the hand and gather up the coils of the lasso.

The men will be exercised singly by galloping in a circle past a post, at the word: *By file*—SWING LASSOS. At the word "lassos" the first man starts on a canter, swinging the open noose round his head. As he passes the post, he lassos it if he can. To help carts and artillery the men will ride up singly, and drop the nooses of their lassos as directed by their officers. To start a heavy load, always keep the lasso in the right hand at first to avoid breakage by sudden strains. In turning to the left it must also be taken in hand, or it will get under the tail and frighten the horse. In narrow roads take it up short to turn corners, etc., and let out when in free space to avoid crowding horses together. Colonels should practise putting fifty or sixty men to ammunition wagons or heavy siege guns, to accustom the men to difficulties. Lasso drill should be taught to green cavalry to be used in the field, even before sabre drill. It is always useful in campaigning. Recruits unfit for other duty can be made useful to help trains and heavy guns, etc.

The Gatling gun or American mitrailleuse will be issued for cavalry service as follows: To every brigade one section of two pieces with a caisson to each piece, provided with spare parts to replace those lost or dis-

abled. The ordnance officer of the brigade will be a captain of artillery, and besides issuing ordnance stores will command the section. Regimental ordnance sergeants shall be detailed from the artillery and command pieces and caissons, besides helping regimental ordnance officers. The latter shall replace the captain according to seniority in case of death or disability, unless the brigade commander shall otherwise direct. All the men of the regiments shall be successively instructed in the school of the piece, and twelve men with a corporal shall be assigned to each gun and caisson to draw it with their lassos. These men shall be detailed in rotation, and shall not be required to do picket duty till the second day after their tour of lasso duty.

When the road admits they shall march in column two guns abreast, each followed by its caisson. If not, guns and caissons shall march separately and not together by piece and caisson.

To go into action the battery leader commands, *In battery to the* (wherever it may be, front, rear, right, or left)—MARCH. At the word "march," the drivers gallop up, following the wave of the leader's sabre, and wheel the guns around, one to the right, the other to the left, leaving them pointed at the enemy and within ten feet of each other. The corporal dismounts together with the ordnance sergeant. The corporal unlimbers, the sergeant points and trails the piece. The men being numbered previously from 1 to 12, 1, 2, and 3 dismount. The horses are held by the next men to each. Men on artillery duty may put their sabres on the limber for convenience.

The limber is taken back ten feet, and the drivers all dismount. No. 1 commences to hand out cartridge feed-cases. As he takes them from the limber he hands them to No. 2, who carries them to the corporal. The corporal feeds them into the hopper, and removes each feed-case as it becomes empty, receiving a full one in exchange.

No. 3 turns the crank. The sergeant attends to the pointing. The limber should be filled with feed-cases, all filled with cartridges. The caisson contains loose cartridges. Caissons will halt and wheel round behind their guns. The caisson sergeants will send Nos. 1 and 2 back and forth to the limber with full feed-cases, to fetch back empty ones. He fills them himself.

It becoming desirable to limber up, the battery officer commands, *Cease firing! Limber to the*, etc. The corporal limbers up. No. 1 closes the lid. The rest mount and the gun is taken off.

Mitrailleuse firing is most effective at 100 to 500 yards. With the half-inch gun the practice is inaccurate beyond 500 yards, but with the one-inch gun fair shooting can be made beyond it. The gun should be considered as a good piece inside of 500 yards, and as a rule not used beyond that distance. The sparing use of ammunition must be insisted on by brigade commanders; a section getting out of ammunition in a crisis betrays a poor officer at its head. To repel a charge at close quarters, the American mitrailleuse is invincible, if in good hands. To storm it in the enemy's hands, charge in open skirmishing order, and get to the flanks of the battery. The instant a piece is taken, lasso it and gallop it off at full speed.

PISTOL DRILL—FIRING PRACTICE.

THE squad being in line with pistols and sabres on, the instructor commands (always explaining and showing), ATTENTION TO SABRE EXERCISE! FOURS RIGHT! RIGHT AND LEFT FILE! HALT! FRONT! which will be executed as in sabre exercise.

The instructor then commands, *Draw*—PISTOL! At the word "pistol," unbutton the holster on the thigh, draw out the pistol and hold it up, muzzle perpendicular, in front of the right shoulder, the thumb on the hammer ready to cock it, the forefinger on the guard, the rest of the fingers around the stock of the pistol.

He next commands, *Inspection*—PISTOL. 1. At the word "pistol," make a semicular sweep directly down and in front of the body, using the thumb to half-cock the pistol during the sweep. 2. Resume the position of draw pistol, and revolve the cylinder as the inspecting officer passes with the forefinger of the left hand. 3. When he has passed, lower the pistol, muzzle down, by the right thigh. As soon as the instructor has duly inspected the pistols, he returns to his place and commands, *Raise*—PISTOLS.

The position of draw is assumed, and each man carries his right foot two feet from the left, bringing up the bridle hand opposite the belt plate, thus supposing the squad to be mounted. The instructor next commands, READY.

At this command, strike the pistol downwards sharply in a semicircular sweep, cock it with the thumb, and come back to raise pistol. AIM. Point the pistol at the object with the arm nearly straight, and bring both sights to bear in a line. (N. B. The instructor will always prefix "at infantry" or "cavalry," "on the right"

or "left" to this command, and will specially caution the men to mind their sights.)

FIRE. Pull the trigger. If the lock is at all stiff, use two fingers. (The disturbance of aim in pulling the trigger is the great cause of much inaccurate shooting with the pistol. When the men have had plenty of practice with the weapon to remove danger of accidents, the armorer should turn their locks into hair-triggers or nearly so by a little filing at the notches in the tumbler.) Ready, aim, and fire, should be repeated six times in succession to correspond to the charges in a loaded pistol.

The instructor then commands, LOAD BY THE MOTIONS. (Colt's.) Motions: 1. LOAD. At this word carry the left hand to the lever, the pistol at a raise, and half-cock with the right thumb. 2. Take two or three cartridges from the pouch, insert one in the chamber with the fingers, revolve the cylinder till the load comes under the lever. 3. Ram it down and catch up the lever. 4. Put in a second cartridge. 5. Ram it down; and 6, 8, 10, and 12, insert cartridges; 7, 9, 11, and 13, ram them. 14. Cap the cones, after which come to a ready.

The instructor commands next, *Return*—PISTOL. At the word "pistol," replace it in the holster, and button the same.

In firing practice with the loaded pistol, the men should be mounted. At first they should ride up in file to within ten feet of a row of large targets, the size of a man on horseback, six in number, halting about the centre of the row, which will be semicircular in form. With a slow deliberate aim they should try to put one ball in each target as near the bull's-eye as possible. Each man after firing rides off to reload, and the next takes his place. The instructor attends, to correct wild firing, and to caution the men as to attention to sights and disturbance of aim in pulling the trigger.

The man who have fired form line on his left, and watch the others, paying attention to the instructor's corrections.

Six targets so arranged form a mimic representation of the melee in a battle, where the aim must be frequently changed from object to object. The second firing day the same distance—ten feet—is to be observed, but the firing is to be more rapid. Four seconds only will be allowed to each shot on this day, but the same order of halting will be observed. The third firing day the targets will be removed to a radius of twenty feet, and ten seconds per shot allowed from a halt. The fourth day the targets will be placed in a semi-

circle of a hundred feet radius. The men will successively canter round this circle at ten feet from the targets, which are lowered to the height of an infantry soldier, and endeavor to put a bullet in each while at speed.

The fifth and last day the instructor orders, PREPARE TO CHARGE. At this order sabres will be drawn and placed in the left hand, which holds them by the blade close to the hilt. The pistol will be drawn, being secured to the right side of the belt by a cord a yard long.

At the next command, *By files*—CHARGE, the men will start individually and successively from the right. The squad will be formed in line in the centre of the semicircle as before. Each man will gallop round the targets close enough to touch them with the point of the sabre. He will fire at the first, and then drop the pistol over his left arm to use up the cord. Catching his sabre, he will cut at the second, striving to lop off one of the thin sticks put on the top in rows like comb-teeth. He will fire at the third, returning his sabre and catching up his pistol, and so on alternately to the sixth, when he forms upon the left of the squad.

Each man will have two trials, being guided by the experience of his predecessors, and the drill will take a whole morning. In all firing practice shots will be counted and registered on lists to each man's name by the quartermaster-sergeant, who attends the captain for the purpose. At the end of the fifth firing day a silver arrow one inch long will be given, to be worn as a pin on the left breast when on parades or inspections by the best shot in each troop. The best shot in the regiment will receive the same decoration in gold.

Every year there will be five firing days, and similar prizes will be bestowed afresh. Accurate pistol-shooting is of the utmost importance to a cavalry soldier. It demands far more practice than that with the carbine, being more difficult on account of the motion of the horse, and the rapid aim requisite. In a melee always wait till the last moment before firing at an enemy. A shot inside of six feet is worth a dozen shots outside of that distance. The men having learned the full use of their weapons, on foot and on horseback, are now fit to be put to troop and regimental movements at once, as both sabre and pistol drill are taken up simultaneously with horsemanship, and all three worked together.

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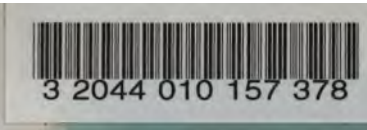
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